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CHOP FEEDS

xperimental Farms Note)

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feeds ranged in price from 35 per ton. In a few of them as a sprinkling of corn, but in ority of them the proportion was very small; they were all nd fibrous, indicating that been largely made from light contained a heavy admixture ulls, mill waste and other s offal. Some of them con- number of weed seeds, frag- straw, etc. There is no won- stock refused them. Indeed ll nigh impossible to imagine y could be used profitably, if d at any price.

d or crushed oats from good grain make a nutritious feed or young pigs and calves the uld be sifted out. While not rotein concentrate, it poss- any excellent qualities as a the meal portion of the ration. he cereals, oats are the most and successfully grown thro- Canada, and there is no rea- the progressive farmer with should not be independent purchased chop feeds. With a grain grinding mill on the farm, there should be little necessity to buy chop.

There are many excellent feeds on the market, the price of which is more or less in accord with their nutritive value. These should be bought, rather than chop feeds, to supplement the home grown feeds and fodders. At the best, chop is but a low-grade feed. If necessity occasions the purchase of the chop, careful examination of the proffered feed is important; unless finely ground those containing an excess of hull can be readily distinguished by the experienced farmer.

BURYING LARGE WEEDS

When a person is plowing under larg weeds or is plowing under some green manure crop, and wishes to completely turn it under, attach a chain to one end of the doubletree and carry back to the plow beam, just above the moldboard. Then attach a second chain to the first one near the plow point and let drag in the furrow. The plow in cutting the ground throws the dirt over on to the second chain and this keeps the first chain always held down to the ground, which will then pull under any weeds. If not for the second chain, any heavy weed would throw the first chain up and the weeds will pass under.—R. L.

While He Is Away

Perhaps your hired man has enlisted, or your son has gone to the front. Or perhaps you are keeping much more stock and growing much larger crops, and there is too much work for you. The Government tells us that this is the best way to help win the war.

BT Manure Carrier Will Help You

It makes the chores twice as easy, for it cuts right out the hardest part of them. It cuts out the drudgery of cleaning the stable with a wheelbarrow.

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MANURE CARRIER
Will Do Your Stable Cleaning

It will take out four wheelbarrow loads at once. In one trip or two trips at most you clean the stable. 5 or 10 minutes does the job.

Wide-mouthed bucket drops close to the gutter and you can throw in liquid as well as solid manure without stopping it over. You can push the bucket along from stall to stall with your fork, until you have your load.

No heavy lifting. No hard pushing. The carrier runs on a level overhead track, right over mud or snow, to the pile far from the barn.

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CHOP FEEDS

(Experimental Farms Note)

The term "chop" or "chop feeds" is a general one used to denote a class of feeds which are essentially oat products. Mill feed, cattle feed, oat feed, moulee chop are common names for these feeds used by the local grist mill, while some of the larger mills put out this product in quantities under specific brand names. Certain of these feeds consist entirely of crushed or ground oats, others consist almost entirely of the by-products of the oat meal mill (including oat hulls) while others contain a certain admixture of corn, barley, etc. They are extremely variable in composition. The Commercial Feeding stuffs Act, under the administration of the Department of Inland Revenue does not require any registration of chop feeds nor any guaranty as to their percentages of protein, fat and fibre. However, the "Adulteration Act" has established a standard of quality for certain grain products and it states that "Chop Feed is whole grain of one or more kinds more or less finely ground, and contains not less than ten (10) per cent protein, not less than two (2) per cent of fat and not more than ten (10) per cent of crude fibre." All chop feeds not carrying a guaranty as to nutritive value (minimum percentages of protein and fat and maximum percentage of fibre) ought to conform to this established standard or be considered adulterated.

The correspondence of the Division of Chemistry during the past year has contained many complaints regarding these chop feeds. In certain cases it was stated the feed was refused by all classes of stock and only eaten with repugnance after being mixed with bran or middlings. In any other cases, persistency in feed the material resulted in the death of swine, calves and poultry, apparently partly from starvation and partly from digestive disorders brought on by the low nutritive value of the food and its coarse, fibrous nature.

A few samples of these feeds respecting which complaints had been made, were collected in Ontario, Quebec and British Columbia, and submitted to analysis in the Experimental Farm laboratory.

While it is not claimed that these analyses were typical of chop feeds as sold generally throughout the Dominion, it is highly significant that not one of the seven samples examined contained the minimum percentage of protein required by the standard, that they were all exceedingly low in fat and that they with one exception contained an excess of fibre three of them over 20 per cent. Taken as a series they were of extremely low feeding value and several of them were practically worthless.

These feeds ranged in price from $20 to $35 per ton. In a few of them there was a sprinkling of corn, but in the majority of them the proportion of meal was very small; they were all coarse and fibrous, indicating that they had been largely made from light oats or contained a heavy admixture of oat hulls, mill waste and other worthless offal. Some of them contained a number of weed seeds, fragments of straw, etc. There is no wonder that stock refused them. Indeed it is well nigh impossible to imagine how they could be used profitably, if purchased at any price.

Ground or crushed oats from good quality grain make a nutritious feed though for young pigs and calves the hulls should be sifted out. While not a high-protein concentrate, it possesses many excellent qualities as a basis of the meal portion of the ration. Of all the cereals, oats are the most readily and successfully grown throughout Canada, and there is no reason why the progressive farmer with foresight should not be independent of these purchased chop feeds. With a grain grinding mill on the farm, there should be little necessity to buy chop.

There are many excellent feeds on the market, the price of which is more or less in accord with their nutritive value. These should be bought, rather than chop feeds, to supplement the home grown feeds and fodders. At the best, chop is but a low-grade feed. If necessity occasions the purchase of the chop, careful examination of the proffered feed is important; unless finely ground those containing an excess of hull can be readily distinguished by the experienced farmer.

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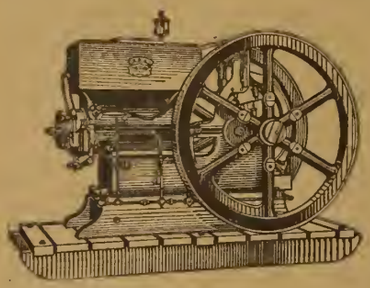

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Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 23. SUSSEX, NEW BRUNSWICK, OCTOBER 23, 1917. Number 2.

Workable Suggestions for N. B. Agricultural Societies

The Agricultural Societies in various sections of the Maritime Provinces will soon be holding their annual meetings. A live Agricultural Society is of inestimable value to a community. The following communication has been forwarded to the various Agricultural Societies in New Brunswick by M. A. MacLeod, Superintendent of Agricultural Societies. Think over the various ideas suggested and go to your annual meeting prepared to take an active interest in the work.

Communication to be read at the Annual Meetings

To Officers and Members of New Brunswick Agricultural Societies:—
Gentlemen:

You are this day assembled to review the work you have accomplished as an organized body of farmers during the Agricultural year now drawing to its close, (November 30), and to make provision for progress in your calling during the year that begins on December 1st.

The New Brunswick Department of Agriculture trusts you may be able to look back with pardonable pride to the work you have been enabled to accomplish, and hopes your deliberations this day may rebound with profit to yourselves and the community you serve.

There are a few matters I would like to bring to your attention with the view that you may possibly see your way clear to act on as many of them as you may deem advantageous to the cause of Agriculture in your District, or that would put you in better shape as an organization, through whom the Department of Agriculture can be of the utmost service to the farmers of your locality.

The following suggestions are not written to weary you, nor for the purpose of just giving expression to vague thoughts. They are passed on to you, a group of progressive farmers, as workable suggestions that have been the means of building up the most energetic Agricultural Societies we have in the Province. You may possibly be working along one or more of the ilnes suggested—I hope you are—it may be that you also have ideas that would be of service to other Agricultural Societies. The Department of Agriculture will be very glad to receive helpful, workable ideas from you at any time and will, in as far as it possibly can, put them into practice. Let us all work together to accomplish results for one common cause.

1. Appoint the most efficient men you have in your midst for your officers, regardless of creed, color or political affiliations.

2. Having appointed your officers do not let the burden of the work rest too heavily upon them—let the rank and file of the members assist wherever they can.

3. Make a thorough canvass of your district for new members. It is a good plan to appoint a committee that will put on a regular whirwlind campaign to end up on a certain date, before December 1st, to do this work.

4. Remember that the Agricultural Society is the strongest and most efficient organization, through and by which the Department of Agriculture can best serve the interests of an Agricultural community. Consequently the more farmers you can get, the more efficient and helpful will your work and that of the Department of Agriculture become to the very classes you and they are striving to benefit.

5. If you have any suggestions to offer to the Department of Agriculture, we will be pleased to receive them, and if feasible act on them.

6. Do you need seed and grain in your district for the spring of 1918? Club your orders together early in the New Year, and let us know your total wants. The Department can put you in touch with the best firms from whom to buy.

7. Do you need fertilizers? Get your orders together without delay. We will put you on the right track.

8. Do you need ground limestone? The Department owns a lime stone pulverizing machine. Can you use it in your vicinity? Let us hear from you.

9. Did you harvest a crop of ripe clover hay? If so, you want the services of the Government Clover Huller. It is available. You know it pays to sow good clover seed. You can grow it yourselves. If you are not prepared for the Huller this year, why not plan for some work for it in your vicinity next year.

10. Do you know that farmers who sold their wool clip co-operatively in the summer of 1915, 1916 and 1917, received a bigger price per pound for the product unwashed than some farmers got for the clip tubwashed? If there are sheep raisers in your district, it will interest them to know that they will have an opportunity to dispose of their wool co-operatively in 1918. Ascertain the approximate quantity that your members will have for sael. Ask for information.

11. In some sections of Prince Edward Island and Nova Scotia, the members of Agricultural Societies sell their lambs co-operatively, at prices greatly in advance of those received by farmers who do not sell co-operatively. Would your sheep raisers consent to hold their lambs and all sell together on a set date, knowing that they would receive the very best possible market prices?

12. Is there some land in your districts that requires underdrainage? The Traction Ditcher owned by the Government is available. Get information from the Department about it.

13. Encourage as many of your members as have not already set aside the seed required for next spring's seeding, to do so at their very earliest opportunity. If there is a shortage, let us know, as stated in paragraph, early in the New Year. If any of your members have a surplus of good seed grain, of any kind, let us know so that we may put farmers not so forutnate, in touch with a source of supply.

14. Are you giving your pure bred sires the care that the prices you paid for them, and their value in increasing the usefulness of your herds and flocks warrant?

15. Are your sheep owners troubled by dogs? The act passed by the Legislature of the Province last winter gives redress. Have you a copy of the Act on file? Get one from the Department.

16. Do you want pure bred sires? Get in touch with the Department. Find out all about how cheaply your wants can be supplied.

17. Do you want some qualified practical men to address one of your meetings on any particular subject—ilvestock, horticulture, dairying, beekeeping or general farming topics? If so, let us know and we will try to arrange dates with you when one of our men can be with you.

18. Do you encourage your members to take farm papers and Agricultural Literature? It helps to keep them abreast of the times.

19. Do not let politics or other factors enter your organization to disrupt you. Work for and with each other as farmers.

20. Have your reports ready sworn to and forwarded to the Department of Agriculture not later than December 1st, and in this way tidy up the year's work, ready to begin another year with a clean record. Be sure to elect delegates to the New Brunswick Farmers' and Dairymen's Association.

Timely Suggestions

Harvesting operations for 1917 are now practically completed and many of our farmers are well advanced with the work of preparing for the seeding season of 1918.

That the farmers of The Maritime Provinces intend to put forth every effort to "grow things" in 1918, is evidenced by the large areas of land that have been plowed this fall. The plow will be kept at work turning furrow after furrow or two furrows at a time, until Jack Frost prevents further operations on the soil.

Our farmers did their best to heed the call for increased production in 1917. They worked under difficulties that were hard to overcome—scarcity of labor, high priced labor, fertilizers and seeds, and adverse weather conditions. It may be that many of them did not succeed as well as they would wish in 1917, but they must go on to prepare for redoubled efforts in 1918. The call is ringing louder and clearer than ever. Meatless days are here, wheatless days are coming, and many more are the ways in which all classes must curtail and economize before the common enemy is vanquished.

The growing of plants is the one means of exploiting Nature without impoverishing her.

Growing things makes the farmer and the county richer, and yet conserves the future.

Every provident nation encourages its people to grow things.

It means sacrifice, but war times are times of sacrifice, and the farming community is not taking second place to any in its willingness to sacrifice.

Fertilizers are going to be scarce and high, so it is advisable for our farmers to lay in their requirements early in the season.

The seed supply should also be attended to without undue delay. Our most successful farmers follow the practice of seed selection in the field, and many of them have already put aside the best of their harvest for seed purposes. Others neglect the preparation of seed until near the time when they are going to use it. If the field system of selection is not followed, a good fanning mill selection should be made early in the season, and while there are large quantities in the bins from which to select the plumpest and best. What applies to seed grain also applies to the selection of potatoes. Like produces like, consequently only well formed, disease free tubers should be selected. The prevalence of potato diseases during the past season should make this patent to all concerned.

Are the various machines you use in the field thoroughly cleaned, oiled and stored under cover for the winter. It is poor economy not to take good care of the farm implements and machines, even in times when they are less expensive than they now are.

Have you dipped your sheep and lambs to rid them of vermin before putting them in winter quarters? Are you flushing your ewes and thus preparing for a bumper lamb crop next summer? With lambs selling in the vicinity of $10.00 each, every extra lamb counts.

A few pieces of boards or other material to keep out the cold where necessary, may save dollars for you in your feed bill. Don't neglect adequate ventilation.

The Cape Breton Island Exhibition

In no section of the Maritime Provinces has there been more advancement made in the matter of an Agricultural Exhibition than in Cape Breton.

Cape Breton's industries demand a large army of artisans and laborers, and consequently there is a large consuming, well paid public that must be fed. The Cape Breton farmer, who industriously caters to the needs of this splendid market, is reaping a good reward for his labors.

Year by year the quantity of produce that is grown in the vicinity of the Sydneys, is increasing and the necessity for importing from outside sources is being diminished.

The strangers' conception of Cape Breton is that it is a rocky, barren country, where the climate is nine months winter and three months very late in the fall, and where nothing is produced but cod.

The person who is more familiar with conditions in Cape Breton, knows that so far as climate is concerned, the other sections of the Maritime Provinces have nothing on that splendid portion of the Mayflower province, except it be for a week or so in the spring, when the last shreds of the ice floes from the north float along its shores on their way to become liquified in the Gulf stream. He also knows that Cape Breton soil is good and rich, and that while there are no great areas of level land, yet the sloping hillsides are easily worked and yield bountiful arvests.

One had only to visit the Sydney exhibition, recently held. to be fully convinced of Cape Breton's splendid possibilities as an agricultural community.

When the Cape Breton Exhibition was first held, about eight years ago, there was only one pure bred dairy cow shown—a Guernsey. This year there was a showing of nearly one-hundred and fifty head of pure bred Jerseys, Guernseys, Ayrshires and Holsteins, many of which were the equal of representatives of the respective breeds found at some of the larger and older interprovincial fairs.

Why the change? The answer is that some of the most progressive farmers in the vicinity of the Sydneys have made a practice of attending the Short Courses at the Nova Scotia Agricultural College every winter since the classes were first organized. They have also been visiting the provincial and winter fairs, and there learned and seen what other farmers were accomplishing. They invested in a few pure bred sires of the breed of their choice. An occasional pure bred female was from time to time added to their respective herds. The get and progeny of these animals have increased the herds, until as a fitting climax to the whole transaction, the visitors to the Sydney fair found the various breeders—Nicholson, McQuire, The Jacksons, The Munns, Drysdale, The Rosses, Crowdis, McPhee Redmond; Allen, The Moffatts, Oland, McQueen, McKenzie, Earson, several Agricultural Societies and others, competing for supremacy in the ring with a class of stock that would do credit to any breeder.

The rapid strides that have taken place in the pure bred classes, also been extended to the grade classes, until no where in the Maritime Provinces is there such a splendid showing of high grade dairy cows, as is found in the vicinity of the Sydneys. The various farmers are consistently breeding along certain lines, and sticking to the breed of their choice. Several prize winners in the dairy classes of the big winter fair have also been purchased and added to the already well established herds.

The exhibition of Dairy Cattle was unquestionably the outstanding feature of the big fair.

The diploma for the best bull, any breed or grade, went to M. W. Ross & Son on the Ayrshire bull, College Peter Pan. A similar honor in the female calss was captured by C. A. Munn & Sons, with their Holstein cow, Mercena Vale De Kol.

The champion Ayrshire female was Blythe 2nd of Springvale, shown by John Redmond.

The Jersey championships went to H. A. Moffatt & Son on their bull, Signor Berni and their female, Josie of Lo Keview.

H. C. Carson had the best Gnernsey female, the calf, Kate of Middle Head.

J. McKenzie's Laurier was the champion Guernsey bull.

The number of entries in the cattle class totalled nearly 350 head.

There were 68 entries in the horse classes, but there was not a great deal to shout about. The most of the horses were at home on the farms, busily harvesting the crops or turning the sod in preparation for next season's seeding.

The best pure bred stallion in the draught class was the Clydesdale, Baron Majestic. In the light horse stallion class the championship went to S. D. Gillis & Son of their Standard Bred Jack Dalton.

The sheep entries numbered 122 head. the majority of which were out in ordinary field fit. There were some pure bred Leicesters, Cheviots, Oxfords, Southdowns and Hampshires,, but no Shrops. There are more Shrops in Cape Breton than any other breed, and it is up to the Shrop breeders to pull themselves together, get out to the fair and see what they can do. There is a big demand for Shropshire breeding stock and farmers, who own a flock of pure breds and who do not try to cater to the demand, are letting easy money slip through their fingers.

The Swine numbered 49. Berkshires, Yorkshires and Chester Whites were represented. It was a regular walkover in each class, owing to lack of competition.

The poultry show at Sydney was very slim, owing to the fact that the accommodations for showing poultry is very poor, and the various poultry breeders bycotted the show and will continue to do so, until they are given better quarters.

Next to the dairy cattle sections, the display of vegetables was the most outstanding feature of the show. There was a profusion of well grown specimens in every section, ample testimony to Cape Breton's claim for productiveness. The fruit exhibit, although not so extensive as at the provincial fair, was well staged and in a better stage of maturity. the latter undoubtedly owing to the later season.

Apples, clean marketable apples, can be produced in Capt Breton.

The Boy Scouts' under their motto, "Be Prepared", made a creditable showing of garden produce, that showed what young hands can do to help produce food and win-the-war.

The Ladies and Domestic Departments were well filled, and the work compared very favorably with that done by the aldies of the other provinces.

The weather man was quite favorable to the show, and the attendance was all that the management could expect.

The Nappan Experimental Farm had an educational display along the same lines as that put on at the other fall fairs.

The N. S. A. C. also had a booth similar to the one they had at the Halifax exhibition.

Both of these features were well patronized, and the work of the two institutions was brought closer to the rank and file of the farmers, who do not get away to visit these educational departments as often as they would like.

Cape Breton is a hive of mines and manufacturing industries, all of which call to the farmers for more food production to feed the non-producers that are necessarily employed therein. The farmers are alive to the demands and the Sydney Exhibition is doing good work in stimulating the laudible desire to excel. Go it Cape Breton Farmers, yours is as good a heritage as one will find anywhere on the Globe.

THE PRIZE WINNERS

Judges

Cattle—Prof. J. M. Trueman. Sheep and Swine—Fred L. Fuller. Butter and Cheese—W. A. McKay. Grains and Seeds—H. B. Langille. Horses—J. H. Fraser. Field Roots—Jas. Allen. Poultry—W. H. Henry. Horticulture Mr. Byres. Ladies Work, Preserved Fruits, Honey—Miss J. A. Fraser.

HORSES

Stallion, pure breed, 3 years and over—1, Chas. Buist, Sydney.

Mare or Gelding, any breed or grade, 4 years and over—1, Walter Drysdale, Sydney; 2, C. A. Munn, Leitches Creek, N. S.

Mare or Gelding, any breed, over 3 and under 4 years—1, D. R. Nicholson, Coxheath.

Best Mare or Gelding, any age, Diploma—Walter Drysdale.

Best Stallion, any breed or grade, any age, Diploma—Chas. Buist.

Carriage Horses

Mare or Gelding, any breed or grade, 4 years and over—1, John W. McQueen; 2, C. F. Gardiner, North Sydney; 3, D. R. Nicholson.

Mare or Gelding, any breed or grade, over 2, under 3 years—1, A. N. McDonald, Sydney.

Mare or Gelding, any breed or grade, over 1, under 2 years—1, Jehn McKeigan, Mineral Rock; 2, S. D. Gillis & Sons; 3, C. F. Gardiner.

Mare or Gelding, any breed or grade under 1 year—1, S. D. Gillis & Sons.

Brood Mare with Foal by side—1, S. D. Gillis & Sons.

Brood Mare and two of her progeny, Diploma—S. D. Gillis & Sons.

Best Mare or Gelding, any age, Diploma—1, John McQueen.

Roadster Horses

Stallion, any pure breed, 3 years and over—1, S. D. Gillis & Sons.

Mare or Gelding, any breed or grade, 4 years and over—1, J. Webster Allen; 2, Dan Morrison, Sydney; 3, Milford Moffatt, Groves Point.

Mare or Gelding, any breed or grade, over 3 and under 4 years—1, J. G. McDonald, Sydney; 2, A. N. McDonald, Sydney.

Mare or Gelding, any breed or grade, over 1, under 2 years—1, D. H. McKay, Glace Bay; 2, A. D. McGillivary, North Side East Bay; 3, W. J. Moffatt, North Sydney.

Mare or Gelding, any breed or grade, under 1 year—1, Percy Hill, Pt. Edward; 2. J. Webster Allen.

Brood Mare with foal by side—1, Percy Hill; 2, J. Webster Allen.

Best Mare or Gelding, any age, diploma—J. Webster Allen.

Agricultural Horses

Mare or Gelding, 4 years old or upwards, over 1100 lbs.—1, E. J. Johnstone, Georges River; 2, John W. McQueen, Leitches Creek; 3, D. H. McKay, Glace Bay.

Mare or Gelding, 3 years and under 4, over 1000 lbs.—1, Chas. Buist; 2, Geo. D. Oland, Coxheath; 3, J. H. McLean, Jacksonville.

Mare or Gelding, over 2 years, under 3 years—1, Charles Andrews, Coxheath; 2, Chas. Buist; 3, H. A. Moffatt, Groves Point.

Mare or Gelding, over 1 year, under 2 years—1, C. W. Totten, Sydney; 2, Geo. D. Oland.

Mare or Gelding, under 1 year—1, Geo. D. Oland; 2, H. A. Moffatt.

Brood Mare with foal by side—1, Geo. D. Oland; 2, H. A. Moffatt.

Best Mare or Gelding, any age, diploma—C. W. Totten.

General Purpose Hrses

Mare or Gelding, any age, weighing not more than 1200 lbs.—1, M. W. Ross & Son, Sydney Mines; 2, Murdoch A. McLeod, Loch Lomond West; 3, R. M. Jackson, Jacksonville.

Pony 12½ Hands and Under

Pony, in harness, saddle, or without either—1, Wm. C. Nicholson, Coxheath; 2, J. W. Lawley, Glace Bay; 3. Geo. Lanford McDonald, Sydney.

GRADED BEEF CATTLE

Fat Steer or Cow, 3 years and over—1, R. M. Jackson, Jacksonville; 2, Fred McLean, Sydney.

Fat Steer or Heifer, over 1 and under 2 years—1, Mrs. Neil E. Townsend, Sydney.

Best Yoke Working Oxen, any age—1, D. R. Nicolson, Coxheath.

DAIRY CATTLE

Holstein

Bull, 2 years and under 3—1, Jas. McGuire, Ashby; 2, D. R. Nicholso

Bull, over 1 and under 2 years—1, Jas. McQuire; 3, D. R. Nicholson.

Bull, 6 months and under 1 year—1, Alex. K. Jackson, Jacksonville; 2, Jas. McGuire; 3, C. A. Munn.

Cow in milk, 4 years or over—1, C. A. Munn; 2, D. R. Nicholson.

Dry Cow, 4 years or over—1, D. R. Nicholson; 2, Jas. McGuire; 3, D. R. Nicholson.

Cow, over 3 and under 4 years—1, D. R. Nicholson.

Dry Cow, over 3 and under 4 years—1, Jas. McGuire; 2, Walter Drysdale, Sydney; 3, Alex. K. Jackson.

Cow, over 2 and under 3 years—1, C. A. Munn; 2 and 3, D. R. Nicholson.

Heifer, over 2 and under 3 years—1, Walter Drysdale.

Heifer, over 18 months up to 24 months—1, D. R. Nicholson; 2, C. A. Munn.

Heifer, over 12 months up to 18 months—1 and 2, D. R. Nicholson.

Heifer Calf, over 6 months, under 1 year—1 and 2, D. R. Nicholson; 3, Jas. McGuire.

Heifer Calf, under 6 months—1 and 2, D. R. Nicholson.

Best Bull, any age, Diploma—Jas. McGuire.

Bull, and 3 of his get, Diploma—Jas. McGuire.

Cow and 2 of her progeny, Diploma—D. R. Nicholson.

Herd—1, D. R. Nicholson; 2, Jas. McGuire.

Breeder's Young Herd—1, D. R. Nicholson.

Best Female, Diploma—C. A. Munn.

SPECIALS

Offered by the Holstein-Friesian Association of Canada.

Four colves under 12 months—1, D. R. Nicholson.

Three animals, any age, get of one sire—1, D. R. Nicholson.

Three animals, any age, progeny of one cow—D. R. Nicholson.

Ayrshires

Bull, 3 years or over—1, Beechmont Live Stock Association; 2, Neil McKinnon, Kempt Head; 3, Georges River Agricultural Society.

Bull, over 2 and under 3 years—1, M. W. Ross & Son, Sydney Mines.

Bull, over 1 and under 2 years—1, Wm. Crowdis, Millville, Boularderie;

2, John Redmond, North Sydney; 3, A. B. McPhee, Leitches Creek.

Bull, 6 months, under 1 year—1, M. W. Ross & Son.

Bull Calf, under 6 months—1, John Redmond; 2 and 3, M. W. Ross & Son.

Cow in milk, 4 years or over—1, John Redmond; 2 and 3, M. W. Ross & Son.

Dry Cow, 4 years or over—1 and 3, John Redmond; 2, M. W. Ross & Son.

Cow, over 3 and under 4 years—1, M. W. Ross & Son.

Dry Cow, over 3 and under 4 years—1, M. W. Ross & Son.

Cow, over 2 and under 3 years—1, John Redmond.

Heifer, over 2 and under 3 years—1, M. W. Ross & Son.

Heifer, over 18 months up to 24 months—1, M. W. Ross & Son; 2, John Redmond.

Heifer, over 12 up to 18 months—1, John Redmond; 2, M. W. Ross & Son.

Heifer Calf, over 6 months, under 1 year—1 and 2, M. W. Ross & Son.

Heifer Calf, under 6 months—1 and 3, M. W. Ross & Son; 2, A. B. McPhee.

Best Bull, any age, Diploma—M. W. Ross & Son.

Bull and 3 of his get, Diploma—M. W. Ross & Son.

Cow, and 2 of her progeny, Diploma—M. W. Ross & Son.

Herd—1, M. W. Ross & Son; 2, John Redmond.

Breeders Young Herd—1, M. W. Ross & Son.

Best Female, Diploma—John Redmond.

Jersey—Pure Bred.

Bull, 3 years or over—1, J. Webster Allen, North Sydney.

Bull, over 2 and under 3 years—1, H. A. Moffatt, Groves Point.

Bull, over 1 and under 2 years—1, Geo. D. Olland, Coxheath.

Bull, 6 months and under 1 year—1, John W. McQueen, Leitches Creek.

Bull Calf, under 6 months—1, H. A. Moffatt.

Cow in milk, 4 years old or over—1 and 2, J. Webster Allen; 3, H. A. Moffatt.

Dry Cow, 4 years or over—1, H. A. Moffatt.

Cow, over 2 and under 3 years—1, J. Webster Allen; 2 and 3, H. A. Moffatt.

Heifer, over 2 and under 3 years—1, John W. McQueen.

Heifer, over 18 months, up to 24 months—1, John W. McQueen; 2 and 3, J. Webster Allen.

Heifer, over 12 months up to 18 months.—1, J. Webster Allen; 2, H. A. Moffatt; 3, John W. McQueen.

Heifer Calf, over 6 months, under 1 year—1, 2 and 3, H. A. Moffatt.

Heifer Calf, under 6 months—1, J. Webster Allen; 2, H. A. Moffatt.

Best Bull, any age, Diploma—H. A. Moffatt.

Bull and 3 of his get, Diploma—J. W. Allen.

Cow and 2 of her progeny, Diploma—J. W. Allen.

Herd—1, H. A. Moffatt; 2, J. W. Allen.

Breeders' Young Herd—1, H. A. Moffatt.

Best Female, Diploma—H. A. Moffatt.

Guernsey—Pure Bred

Bull, 3 years or over—1, Jack McKenzie, Coxheath; 2, H. C. Corson, South Ingonish.

Bull, over 1 year, under 2 years—1, Little Bras d'Or Agr. Society.

Bull Calf, under 6 months—1, R. M. Jackson.

Cow in milk, 4 years or over—1 and 2, Jack McKenzie; 3, R. M. Jackson.

Dry Cow, 4 years or over—1, R. M. Jackson; 2 and 3, Jack McKenzie.

Cow, over 3 under 4 years—1, R. M. Jackson.

Cow, over 2 and under 3 years—1, R. M. Jackson.

Heifer, over 2 and under 3 years—1, H. C. Corson.

Heifer, over 18 months, up to 24 months—1 and 2, R. M. Jackson.

Heifer, over 12 months, up to 18 months—1, R. M. Jackson.

Heifer Calf, over 6 months, under 1 year—1 and 2, H. C. Corson; 3, Jack McKenzie.

Heifer Calf, under 6 months—1, R. M. Jackson.

Best Bull, any age, Diploma—Jack McKenzie.

Bull and 3 of his get, Diploma—Jack McKenzie.

Cow and 2 of her progeny, Diploma—R. M. Jackson.

Herd—1, Jack McKenzie.

Breeder's Young Herd—1, R. M. Jackson.

Best Female, Diploma—H. C. Corson.

Grade Jerseys

Cow, 4 years and upwards—1 and 2, Walter Drysdale; 3, S. D. Gillis & Sons.

Dry Cow, 4 years and upwards—1, J. Webster Allen; 2, Jack McKenzie; 3, Alex. K. Jackson.

Cow, 3 years old—1, H. A. Moffatt; 2, M. W. Ross & Son.

Dry Cow, 3 years—1, S. D. Gillis & Sons; 2, Nelson Beaton.

Cow, 2 years—1, A. Drysdale, Sydney; 2, Walter Drysdale.

Heifer, 2 years—1, Geo. D. Oland; 2, S. D. Gillis & Sons.

Heifer, over 18 months, up to 24 months—1, J. Webster Allen.

Heifer, over 12 months, up to 18 months—1, H. A. Moffatt; 2, Geo. D. Oland.

Heifer, 6 months, under 1 year—1, J. H. McLean, Jacksonville.

Heifer, under 6 months—1, John McMullen; 2, J. P. Harvey; 3, C. A. Munn.

Grade Guernseys

Cow, 4 years and upwards—1, H. A. Moffatt; 2 and 3, John W. McQueen.

Dry Cow, 4 years and upwards—1, J. H. McLean; 2, Alex. K. Jackson.

Cow, 3 years—1 Jack McKenzie; 2, John McMullen.

Cow, 2 years—1, D. R. Nicholson.

Heifer, 2 years—1 and 2, Jack McKenzie.

Heifer, over 18 months, up to 24 months—1, Jack McKenzie; 2, C. A. Munn.

Heifer, over 12 months, up to 18 months—1, Geo. D. Oland; 2, John W. McQueen.

Heifer, 6 months, under 1 year—1, C. A. Munn; 2, Jack McKenzie.

Heifer, under 6 months—1, J. H. McLean.

Grade Ayrshire

Cow, 4 years and upwards—1, J. W. Allen; 2, Arthur R. Richardson, South Bar; 3, M. W. Ross & Son.

Dry Cow, 4 years and upwards—1, John Remond, North Sydney; 2, A. Drysdale; 3, S. D. Gillis & Sons.

Cow, 3 years—1, Arthur R. Richardson; 2, S. D. Gillis & Sons.

Dry Cow, 3 years—1, J. P. Harvey, George River.

Cow, 2 years—1 and 2, Arthur R. Richardson; 3, S. D. Gillis & Sons.

Heifer, 2 years—1, 2 and 3, Arthur R. Richardson.

Heifer, over 18 months, up to 24 months—1, John McMullen; 2, A. Drysdale.

Heifer, over 11 months, up to 18 months—1, Wilson Gillis; 2, Arthur R. Richardson; 3, S. D. Gillis & Sons.

Heifer, 6 months, under 1 year—1, Geo. O. Oland; 2 and 3, A. J. McLeod, South Bar.

Heifer, under 6 months—1, Geo. D. Oland; 2, C. A. Munn; 3, S. D. Gillis & Sons.

Cow, 4 years and upwards—1, D. R. Nicholson; 2, C. A. Munn; 3, John W. McQueen.

Dry Cow, 4 years and upwards—1, 2 and 3, D. R. Nicholson.

Cow, 3 years—1, Alex. K. Jackson; 2, John W. McQueen; 3, C. A. Munn.

Dry Cow, 3 years—1, Jas. McGuire.

Cow, 2 years—1 and 2, D. R. Nicholson.

Heifer, 2 years—1, C. W. Totten; 2, C. A. Munn; 3, John W. McQueen.

Heifer, over 18 months, up to 24 months—1, D. R. Nicholson.

Heifer, over 12 months up to 18 months—1, Geo. D. Oland; 2, John W. McQueen; 3, Nelson Beaton.

Heifer, 6 months, and under 1 year—1, D. R. Nicholson; 2, C. A. Munn; 3, Alex. K. Jackson.

Heifer, under 6 months—1, Geo. McKeagan, Coxheath; 2, Alex. K. Jackson; 3, Geo. W. Oland.

Grade Herds

Best herd of 5 cows, three over 2 years—1, D. R. Nicholson; 2, John W. McQueen; 3, Arthur R. Richardson.

Best Herd 4 Heifers, under 3 years—1, D. R. Nicholson; 2, S. D. Gillis & Sons; 3, Geo. D. Oland.

Best Bull, any age or breed (dairy cattle), Diploma—M. W. Ross & Son.

Best Cow, any age or breed, in milk or calf, Diploma—C. A. Munn & Son.

SHEEP

Leicesters—Pure Bred

Ram, 2 years old or over—1, John McKeigan, Mineral Rock; 2, Eldridge Hill, Pt. Eward.

Ram, Lamb—1, Eldridge Hill.

Ewe, 2 years and over—1 and 2, Eldridge Hill.

Ewe, lamb—1 and 2, Eldridge Hill.

Pen, one Ram, two Ewes, two Ewe Lambs—1, Eldridge Hill.

Cheviots

Ram, 2 years or over—1, Wilson Gillis, Georges River.

Ram, over 1 and under 2 years—1, Wilson Gillis; 2, Murdoch A. MacLeod, Loch Lomond West.

Ram, Lamb—1, Murdoch A. MacLeod.

Ewe, 2 years or over—1 and 3, Wilson Gillis; 2, Murdoch A. MacLeod.

Ewe, Lamb—1 and 2, Wilson Gillis.

Pen, 1 Ram, 2 Ewes, 2 Ewe Lambs—1, Wilson Gillis.

Southdowns

Ram, 2 years or over—1, W. M. Hill, Pt. Edward.

Ram, over 1 and under 2 years—1, W. M. Hill; 2, John McMullen, Georges River.

Ram, Lamb—1, W. M. Hill.

Ewe, 2 years or over—1 and 2, W. M. Hill; 3, John McMullen.

Ewe, over 1 and under 2 years—1, and 2, W. M. Hill; 3, John McMullen.

Ewe, Lamb—1, 2 and 3, W. M. Hill.

Pen, 1 Ram, 2 Ewes, 2 Ewe Lambs—1, W. M. Hill; 2, John McMullen.

Oxfords. All prizes in this class taken by E. J. Johnson, Georges River.

Dorsets

Ram, over 1 and under 2 years—1, J. P. Harvey, Georges River.

Ram, Lamb—1, J. P. Harvey.

Hampshires

Ewe, 2 years and over—1, D. J. McKenzie.

Ewe, over 1 year—John McMullen.

Ewe, Lamb—John McMullen.

Pen—John McMullen.

LONG WOOL

Grades and Crosses

Ewe, 2 years or over—1 and 3, John McKeigan, Mineral Rock; 2 Nelson Berton, Coxheath.

Ewe, over 1 year—1, John McKeigan.

Ewe, Lamb—1 and 2, Nelson Beaton; 3, John McKeigan.

Pen, 2 Ewes, 2 Ewe Lambs—1 and 3, John McKeigan; 2, Nelson Beaton.

MEDIUM WOOL

Grades and Crosses

Ewe, 2 years and over—1 and 2, J. P. Harvey, Georges River; 3, E. J. Johnson.

Ewe, over 1 year—1, Geo. McKeigan; 2 and 3, D. J. McKenzie, Balls Creek.

Ewe, Lamb—1, J. P. Harvey; 2, Geo. McKeigan; 3, D. J. McKenzie.

Pen, 2 Ewes, 2 Ewe Lambs—1, D. J. McKenzie; 2, J. P. Harvey; 3, Geo. McKeigan.

Fat Sheep

Fat Ewe—1, Chas. E. Lewis, Coxheath; 2, E. J. Johnstone; 3, Geo. McKeigan.

Fat Ewe Lamb—1, J. P. Harvey; 2, Geo. McKeigan; 3, Nelson Beaton.

Fat Wether Lamb—1 and 2, E. J. Johnstone; 3, John McMullen.

SWINE

All prizes in Berkshire and Yorkshire breeds were taken by Geo. D. Oland, Coxheath and all prizes in Chester Whites by D. R. Nicholson, Coxheath.

All prizes in any other pure bred variety taken by Geo. D. Oland; also all prizes in Grades and Crosses, with the exception of the first prize for sow under 6 months old, which was taken by Geo. McKeigan, Coxheath.

POULTRY

Brahmas, Light or Dark, Cock, Hen, Cockerel and Pullet—All prizes taken by A. F. Milelr, Sydney.

Barred Plymouth Rocks

Cock—1, M. W. Ross & Son, Sydney Mines; 2, Chas. E. Lewis, Coxheath.

Hen—2, M. W. Ross & Son; 3, Chas. E. Lewis.

Cockerel—2, Thos. Leadbeater, New Waterford; 3, M. W. Ross & Son.

Pullet—2, Thos. Leadbeater.

White Wyandottes

Cock—2, M. W. Ross & Son.

Hen—1, 2 and 3, M. W. Ross & Son.

Cockerel—1 and 2, Wm. Mrimelow, Sydney Mines; 3, M. W. Ross & Son.

Pullet—2, M. W. Ross & Son.

Columbia Wyandottes

Cock—1, J. W. Munn, Leitches Creek.

Hen—1, 2 and 3—J. W. Munn.

Cockerel—2 and 3, J. W. Munn.

Pullet—1, 2 and 3, J. W. Munn.

Partridge Wyandottes

All prizes in this class taken by John W. Munn.

Single Comb Rhode Island Reds

Cock—1 and 2, John W. Munn; 3, Chas. E. Lewis.

Hen—1 and 2, John W. Munn; 3, Chas. E. Lewis.

Cockerel—1, 2 and 3, John W. Munn.

Pullet—1, 2 and 3, John W. Munn.

Single Comb White Leghorns

Cock—1 and 2, J. W. H. Willis, Sydney River.

Hen—1 and 2, J. W. H. Willis.

Cockerel—1 and 2, J. W. H. Willis; 3, Roger M. Lewis, Coxheath.

Pullet—1, 2 and 3, J. W. H. Willis.

Single Comb Brown Leghorns

Cockerel—2 and 3, M. W. Ross & Son.

Rose Comb Brown Leghorn

Cock—2 and 3, M. W. Ross & Son.

Hen, 1, 2 and 3, M. W. Ross & Son.

Cockerel—2, M. W. Ross & Son.

Pullet—2, M. W. Ross & Son.

Black Minorcas

Cock—1, M. W. Ross & Son; 2, Wilson Gillis, Georges River.

Hen—1, Wilson Gillis; 2, M. W. Ross & Son.

Cockerel—1, M. W. Ross & Son.

Pullet—1, M. W. Ross & Son.

. . . . . IsM72 95TE — Fz 2S1G2 AasH

Hamburgs, All Varieties

All prizes in this class taken by M. W. Ross & Son.

Single Comb Mottled Anconas

All prizes in this class taken by M. W. Ross & Son.

Game Bantams

Very inferior, no first prizes given, but all 2 and 3 taken by M. W. Ross & Son.

Black Cochin Bantams, Cock and Hen—1, J. Douglas Lawley, Glace Boy.

Breeding Pens

Adult Birds, any other variety—1, M. W. Ross & Son.

GEESE

All prizes in geese taken by Mrs. D. R. Nicholson, Coxheath.

DUCKS

Pekin, Male, Sr.—1, Harry F. Lewis, Sydney River; 2, Mrs. D. R. Nicholson.

Pekin, Male Jr.—1, Harry F. Lewis; 2, Mrs. D. R. Nicholson.

(Continued on page 58)

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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OCTOBER 23rd, 1917

DATES OF ISSUE.

October 9-23
November 6-20
December 4-18

GOOD FELLOWSHIP WATCHWORD THAT LEADS TO SUCCESS

Unselfishesness in community interests is one of the most commendable traits in business ethics. In any country neighborhood, town or suburban district there are always some indivuals who are in a better position, financially or from other causes, to lead in the various enterprieses of the locality, and if these are truly cosmopolitan and so conduct themselves as to help others less fortunate than themselves, instead of ignoring them altogether or what is worse, giving them a "cut behind," or a knock on the sly, th ecommunity spirit will be greatly enlarged and the individual not only benefited himself but resultst in being a real benefactor to humanity.

Selfishness isolates men and he wh ois domi.. ated by this principle cares not for his fellow beings so long as he can steer his own craft clear of accident and land into his coffers another bag of gold. Unhappy indeed, is the community with characters of this type in it. Their own lives having been degraded to the mere fact of money making and greed tends to hold all others down to their lo wlevel of ambitionn.

The spirit of a community should take into consideration the principle of the Golden Rule, which will not only not kick the man that is down, but at least, will give the word of encouragement where needed and thus foster and develop general good fellowship not only with immediate neighbors but also to others with whom they come in contact both in a business and social relationship.

To this end residents of any section should cooperate for one another's good. When by any means one neighbor comes to find ut certain information of general interest by which both he and his fellow farmers can benefit, he should pass the good word along and give them also an opportunity to profit as well as himself. Many on the contrary keep all such information to themselves, hoping thus to get the start of the other fellow and bring himself into greater prominence even though the knowledge passed on would in no way interfere with his own success.

As one in the line of breeding registered stock, or in any other commendable enterprise, he should be tooo big a man to have any secrets that will stand in the way o fhis neighbor's accomplishment, but on the contrary by making use of community interests and general knowledge one should seek to advance the benefits of all to the disadvantage of none.

As a matter of fact, the principal of justice and good fellowship will work out in the end to the advantage even of the selfish man. In the last analysis it is only the worth while things that count. Financial advantage gained by taking an unworthy advantage of one's neighbor, whether it be by "doing the thing tht should not be done" or by "leaving undone the thing that should be done" will make little difference; the principle in either case is condemned by moral equity, and sooner or later the result will be disappointment and even punishment to the offender.

The breeders of registered cattle should at have the interests of the breed as a whole at heart as well as their own private herds. If this is not done and the general excellence of the breed kept in the forefront, even at the cost of individual effort and sacrifice the word decadence must soon be written over the door psts of the Association Hall, no matter what the breed or the men behind it.

Wonderful results can and have been accomplished by united effort and harmonious action, but jeaulousies, wranglings, intrigues, backbitings and the whole list of such things must be eliminated by its members if an association is to be brought up and maintained at its highest sphere of usefulness.

In no other way can excelsion be written upon the banners of any worthy organization or success crown the efforts of those who would win laurels for their favorites, and multiply their values in the service of humanity.

HANNA'S APPEAL

The first statement issued by the new Canadian food controller sounds like real business. But doubtless it will be a surprise to those who have been demanding in vague and general terms that "somebody" do something, and who have imagined that the sole duty of a director of Canadian food supplies was to fix prices which consumers could regard as reasonable.

Hon. Mr. Hanna points is finger at "somebody." And behold it is you, and you, and us Thou shalt not waste any food; thou shalt not eat any storable food when perishable foods are available; thou shalt abandon luxurious living. These are his commandments to the Canadian people. They are put now as a voulntary appeal; but if they are not obeyed under voluntaryism they will have to be enforced by legislative war measures —by conscroption if you like the word.

For— .. ..

(1) It is the imperative duty of Canada to create an exportable surplus of food in order that the people of Britain and the armies fighting for us at the front may be fed;

(2) One of the surest ways of reducing food prices in Canada is to reduce the demand for food supplies—a demand largely create by wanton waste and a luxurious scale of living.

Hon. Mr. Hanna is a strong, forceful man. He ha s been assigned a great task. He is going at that task as a strong and forceful man would go at it. He is working in partnership with another big man and ally at Washington.

Hon. Mr. Hanna is going to bring te war home to the Canadian people. He is going to impress upon them the duty of INDIVIDUAL SERVICE.

THE NEED OF HASTE

France has borne her great losses with remarkable fortitude, and it is only now, after three years of bleeding and when the limit of her man power is about reached, that she is crying out for help. The other day the Ottawa Valley Journal printed extracts from an articles by an American writer telling of the extent to which the manhood of France had been exhausted. The writer decalred that France had men enough left to hold on for a few monnths longer only. At a Red Cross meeting in New York the other day Mrs. August Belmont read a letter received by an American from a Frenchman at St. Just which throws further emphasis upon the need of immediate assistance for the French army. In part the letter reads:

> You ask us to wait for you—how long a time? We shall wait for you; that goes without saying. One can ask everything of our soldiers except not to get themselves killed; but if you delay longer, how many Frenchmen will there be left—old men like me, children of 15 years of age, and hardly these. Take care, lest the French nation be nothing but a remembrance, a glorious rememberance.
>
> France will never perish; but the French, what of them? The blood of France is flowing in torrents. Oh, the killed, the mutilated, the wrecks due to German infamy! Certainly, I am aware of the great difficulties that exist in arousing a population that contains so many Germans and Austrians as the United States; and it shall be to the eternal glory of yourselves and of those who are like you to have given this impulse to your country. But hurry up!

France must be saved. She is looking to America, to the United States and to Canada, to fill the vacana places in the long line that is holding the Germans back.

CONDITION AND FLESHING IN SHOW RING

Complaint is frequently made that condition and fleshing count for too much in beef cattle classes in the show rings, that fat very often covers grave defects in form and gives an erroneous impression of substance. To all of which the best answer is that the supreme function of beef cattle is to produce beef and alleged representatives of any of the beef breeds that come to the judging ring sparse of fleshing, lack in an important particular in which the judge desires information and by right should be turned down in competition with animals more thickly covered.

Fleshing is one of the prime essentials in beef cattle. They are fashioned to carry beef evenly, thickly and smoothly in those parts of the carcass where beef counts for most in cents per pound. If they are not carrying a fair abundance of fleshing, there is no assurance that they will be able to. There is a great difference between individuals in this ability to form fleshing. An Angus or a Shorthorn without evidence of it is only slightly better qualified to be rated as a beef animal than is a Holsetin orán Ayrshire.

* * *

What we will do on any great occasion or opportunity depends largely upon what we are. And we are largely what we have made ourselves.

AN OLD FARM BUILDING CAN BE MADE GOOD WHEN GIVEN A NEW FOUNDATION

Many old barns are today almost as sound and weatherproof as when they were built—above the foundations, but seldom secure below the sills, owing to the inferior materials then available. In old buildings most foundation walls were made of rubble masonry—undressed field stone, laid up either dry or with a lime and sand mortar that frequently crumbled and fell out, leaving the greater part of the strength of the wall dependent upon the weight of the building to bind the stones together.

Farm sheds are often supported on posts, with or without sills, blocked up with loose stones. Weeds grow round the base of the shed, or manure is piled against the walls, confining the moisture, and the bottoms of the posts soon rot away; in time the building is askew or maybe it collapses. Drainage from the stable floor is also very hard on barn sills, especially it the floor is located close to the ground where there is insufficient ventilation, as is usually the case with old barns.

Once the sills decay or the foundations start to crumble the building is doomed to a gradual racking and disintegration, unless steps are taken to remedy the defects. It is economy to renew or strengthen defective foundations at the earliest opportunity; many otherwise derelict outbuildings have been saved in this manner.

Concrete is the best material with which to make these repairs, not only because it is the easiest to handle for any purpose, large or small, and because it is durable and inexpensive, but because a first-class job can be done by the farmer, with the help of his own farm labor, at odd times.

Below ground, earth walls are usually firm enough to act as forms; above ground the forms will have to be made of wood. Plan the forms so there will be no difficult measurements to remember, and make them strong enough to hold the concrete without bulging out of shape.

If the posts or sills of a building are badly rotted away, or the foundations have crumbled and been displaced so as to cause settlement, it is usually better to take the old sills and loose portions of the foundations out entirely and build a concrete wall up to the proper height to take their places. To do this, first support the building by temporary struts alongside the posts to be repaired. A couple of jackscrews will be a great convenience in erecting this underpinning or shoring, but if these are not available the work may be done very nicely by the use of wedges.

When the building is underpinned it should be elevated to straighten and correct any settlement. When this is done and the operator is assured that the underpinning is securely held, saw off the posts above the rotten part and cut away the sills and other defective material; also remove any loose stones in the masonry, even though it may be necessary to take out the greater part of the old foundation wall. Next, set in place the forms for the concrete and have them extend to the level of the new sill, which is not put into place until arter the concrete is poured, thus affording plenty of room for this work.

The bottom of the wall should be about fifteen or eighteen inches thick —made larger than the top, which narrows to ten or twelve inches, by sloping one side of the box form. Leave the forms in place for one week, and after two weeks, when the concrete should be thoroughly hard and after the new sill has been inserted, remove the struts which have been used as temporary support.

Concrete for this work should be mixed in the proportion of one part cement, two parts clean, sharp sand and four parts crushed stone, pebbles or cinders, measurements by volume. The stones or pebbles should not exceed two inches in diameter, and best results are obtained by the use of a mixture of sizes graded from one-half to two inches in diameter, in which case the spaces or voids between the stones or pebbles are reduced and a more compact concrete is obtained. Use a coarse sand, otherwise more cement will be required to insure a dense mixture. The ingredients should be thoroughly mixed in a dry state; then water should be added while the mass is turned over until it is of a mushy consistency.

As little time as possible should elapse between the mixing and the placing. After the concrete is in the form it should be tamped lightly with a wooden or iron tamper or rammer, until the water shows on the top and no stones are left uncovered by the mortar.

Sometimes the stone foundations of a building are in a badly weathered or crumbled state, but not weakened to the point of causing settlement, and perhaps the sills and other framework are perfectly preserved. If exposed to the weather much longer such walls are almost certain to disintegrate and collapse. On the other hand, perhaps conditions do not seem to warrant underpinning the building and replacing the old foundation with a new concrete wall. Then the old masonry may be strengthened and dressed with a facing of concrete, and thus made as strong as its original construction.

On each side of the wall, about three inches from the normal face of the masonry, erect forms. Fill these spaces with a fairly wet mixture of concrete, so that all voids in the old masonry are thoroughly bonded together. Tamp the concrete until it comes up flush with the bottom of the sill to the entire width of the wall, and after it has become fairly hard the outer edge may be beveled to act as a water table.

The forms for this job should be built in sections, and moved from place to place as the work progresses. The concrete should be mixed in the same proportion as that used for the wall, but it is advisable to use smaller stones or pebbles, preferably three-quarter-inch material, so that they may enter the crevices and holes in the masonry.

FOOD ADULTERATION MAY RESULT IN STIFF FINES

While there have been quite a number of cases in Ottawa of violation of the pure food laws, this city has not been guilty of any very flagrant breaches o fthe act. There seems to be a steadily growing appreciation of the necessity of a rigid enforcement of the act. Manufacturers and dealers, as a result of the educational work that has been carried on, prefer to handle only pure food.

Aertain amount of adulteration is always going on but this is not an offence if the adulteration is not injurious to public health. The Pure Food Act defines very clearly what criminal adulteration consists of and gives the penalties, which for fire offences usually are fines ranging from $25 to $50.

Provided adulteration is not injurious to public health, it often tends to lower the cost of living as the honest dealer can not command as high a price as he would for the genuine article.

Part of the act governing adulteration which follows will be found interesting to those not familiar with it.

Adulteration

Food shall be deemed to be adulterated within the meaning of the Act:

(a) If any substance has been mixed with it so as to reduce or lower or injuriously affect its quality or strength;

(b) I fany inferior or cheaper substance has been substituted wholly or in part for the article;

(c) If any valuable constituent of the article has been wholly or in part abstracted;

(d) If it is an imitation of or is sold under the name of another article;

(e) If it consists wholly or in part of a diseased or decomposed or putrid or rotten animal r vegetable substance, whether manufactured or not;

(f) If it contains any added poisonous ingredient or any ingredient which may render such an article injurious to the health of persons or cattle consuming it;

(g) If its strength or purity falls below the standard, or its constituents are present in quantity not within the limits of variability fixed by the Governor-in-Council as hereinafter provided;

(h) If it is so colored or coated or polished or powdered that damage is concealed, or if it is made to appear better or of greater value than it really is;

(i) In the case of milk or butter, if it is the produce of a diseased animal or of an animal fed upon unwholesome food.

Offieces and Penalties

Every person who wilfully adulterates any article of food or any drug, or orders any other person so to do, shall—

(a) If such adulteration is, within the meaning of this Act, deemed to be injurious to health, for the first offence incur a penalty not exceeding five hundred dollars and costs, or six months" imprisonment, or both, and not less than fifty dollars and osts, and for each subsequent ocence a penalty not exceeding one hundred dollars and costs, or one year's imprisonment, or both, and not less than one hundred dollars and costs;

(b) If such adulteration is, within the meaning of this Act, deemed not to be injurious to health, incur a penalty not exceeding two hundred dollars and costs, or three months' imprisonment, and for each subsequent offence a penalty, not exceeding five hundred dollars and costs, or six months' imprisonment, or both, and not less than one hundred dollars and costs.

Every person who, by himself or his agent, sells, offers for sale, or exposes for sale any article of food or any drug, which is adulterated within the meaning of this Act, shall,—

(a) If such adulteration is, within the meaning of this Act, deemed to be injurious to health, for a first offence incur a penalty not exceeding two hundred dollars and costs, or three months' imprisonment, or both, and for each subsequent offence a penalty not exceeding fiee hundred doll ars and costs or six months' imprisonment, or both, and not less than fifty dollars and costs;

(b) If such adulteration is, within the meaning of this Act, deemed not to be injurious to health, incur for each such offence a penalty not exceeding one hundred dollars and costs and not less than five dollars and costs.

DISTRICT REPRESENTATIVES FOR CHATHAM AND WOODSTOCK

Messrs. James Bremner, Jr., ant A. G. Taylor have been appointed to take charge of the Agricultural Offices at Chatham and Woodstock respectively, the former having Northumberland, Restigouche and Gloucester counties, the latter having Carleton, Victoria and Madawaska counties.

Both men are graduates of the Truro Agricultural College and have been employed by the Provincial and Dominion Departments of Agriculture for occasional work and have proved themselves capable to carry on more extensive work for any Department. They will have to do with any agricultural problem before the people, but will give particular study to the practical questions which are always to the fore. Both men are farmers and have had special training in potato work besides the college experience. They will take up their duties about November first.

Mr. Norbert Leger, of Caraquet, will assist Mr. Bremner in Northumberland, Gloucester and Restigouche counties. Mr. Leger was raised upon a farm, educated at Caraquet College and at the Agricultural School at St. Anne de la Pocatiere. Recently he has been managing his father's farm.

No regular assistant will be placed with Mr. Taylor at present, but occasional assistance will be given him in Madawaska and Victoria Counties.

Mr. James King, with Mr. A. C. Belliveau as assistant, is in charge of Albert, Westmorland and Kent counties, with headquarters at Moncton and a small office at Richibucto. Mr. King is a graduate of the Macdonald Agricultural College, with previous experience at District Representative work. Mr. Belliveau is a graduate of the Truro Agricultural College.

LONGLEVITY IN FARM MACHINERY

The time has come when farmers can no longer afford to invest a few hundred dollars in farm implements, put them in the hands of ignorant and careless operators, and leave them standing in fence corners and under trees from one season to the next, thus reducing their usefulness one-half. Such practise has meant loss to the farmer in two ways, first, because of the unnecessary and rapid depreciation of the implement; second, because the owner, failing to get satisfactory results due to such wasteful practise, failed to appreciate what the machine if properly operated and cared for, would do for him and consequently reverted back to hand labor and such inefficient methods.

Any farmer can make his farm machinery inestment a profitable one by following some system as this: First, learn eery adjustment and the purpose and adantage of each before attempting to operate the machine. Second, oil all bearings, wheels, shafts and other mowing parts where friction will cause undue wear an shorten the life of the machine. Third, keep all bolts and nuts tight and replace broken parts with good duplicate parts, rather than by using some makeshift appliance which only means additional trouble. Fourth, keep the machine in a good implement shed when not in use. A coat of paint applied every two or three years will add to its lasting qualities and general apearance. By following the above suggestions a farmer can get better work out of his implements and have them last from last from two to five years onger—F. R. Jones.

LIVING UP TO FARM'S GOOD NAME

There is a whole lot in appropriateness. Some farmers have been accused of giving very inappropriate names to their farms and those which cause merriment among their neighbors. All farms should be named, but these names should be chosen with some characteristic of the farm in view. Do not try to give a summer-resort name to your farm, any more than you would mis-name a child. Many a child has had to go through life living down to a name instead of up to it. Mike, Peter, Moses, and similar names have brought more embarrassment to more than one school boy. And when the daughter grows up she is inclined to hate the pet name given to her when she was a baby, and when it has been Tiny, Flossie, Dollie or Beauty, she has a perfect right to resent. Many a farm would cry out against its name if it could. Name the farm, to be sure, but make it an appropriate name.

HORTICULTURE

PREPARING COMB HONEY FOR THE MARKET

S. B. Bisbee, Canfield, Ont.

Comb honey has a good market in this country. It commands a much higher price than does the extracted honey. It is, however, more expensive to produce than the extracted product and the margin of profit is not in proportion to the cost of producing it as compared with the extracted honey. It behooves us, therefore, to look after all the means by which the ratio of profit may be enhanced.

The consumer will pay more for a section of honey that is full and clean than he will for an inferior looking section. As the cost of producing an inferior comb is approximately the same as that of producing a better one, it follows that it will be to our advantage to produce a first class grade of comb honey.

The points to be considered in producing a good section of honey are, first, to allow the section to stay in the hive until it has been completely or nearly filled and well ripened; second, to have the comb and the wooden section clean and free from any signs of propolis. This latter, which is the subject of my article, is of importance when a high class trade is desired. The honey must reach the consumer in its most attractive form to command the highest prices.

We will assume that care has been taken that the honey is not mixed—that it, that only clover or buckwheat honey as the case may be, is contained in the super. The finished honey should be removed from the hive soon after the honey flow is over. Otherwise, the wood will have considerable propolis to be cleaned off and the comb will be travel stained. I know of no way in which to remove the stain from the combs. If these are touched, the comb will be broken and the honey will leak out. The wood, however, must be cleaned up and made as presentable as possible.

Before removing the sections from the supers it is well to stand the supers on end where the light will show through. A glance will probably show some light brace combs. A sharp knife run through, will remove these so that the sections may be taken out without breaking the capping, thereby causing a leaky section.

The propolis must be scraped off the wood with a sharp knife. A sheet of sand paper tacked down flat on the table or bench will be found very useful for this purpose.

When the sections have been properly cleaned, the work of grading and packing commences. You may make as many grades as your customers demand. The usual practice, however, is to make only about three grades, fancy, No. 1, and No. 2. The balance of the comb is all classed as culls.

In the fancy grade, I put only sections that are very white and in which nearly all the cells next to the wood are sealed. In the number one grade, I put all sections that are free from stain, with combs well fastened to the wood on all four sides. There should be no pollen cells. The entire outside row next the wood may be unsealed, providing the sections weigh fourteen ounces or over.

I wish to point out here that there is an increasing demand for a No. 1 section with the outside row unsealed. If you have customers who desire this grade of honey, these sections might be placed in cases by themselves and reserved for this trade. It is really the most attractive section of all when placed on the table. When the wood is cut away it leaves a comb without a drop of honey ruuning over the dish. It has not the mussy appearance of the comb that had the outside row of cells sealed.

The number two grade may contain combs not so well fastened to the wood on all four sides. They must not, however, be badly stained. They may have a reasonable number of unsealed cells but must weigh not less than thirteen or fourteen ounces.

The cull honey may be graded to suit the market. My practice has been to make several grades of cull sections, according to weight, and place them with the local merchant to be disposed of. There has always been a great demand for these cull sections. There are always a number of people who do not care to pay the high price now prevailing for number one comb honey.

As the honey is being graded, it should be packed in glass front, no-drip shipping cases. Care should be taken that the combs in the back of the case are in every way equal to those placed next to the glass front.

We have tried putting them up in card-board cartons bearing our name. We abandoned this, however, as we found the bottoms of the cartons became honey soaked or soiled. If we wished to use cartons we would prefer to send the merchant a quantity so that each section, as sold, could be slipped into the carton at the time of sale. However, in the future we will stamp our name on the wood of all sections.

When the cases have been filled, they should be wrapped in paper. A small tack at each end after the paper has been folded, will hold it down. It is not necessary then to tie the parcel with cord.

They should now be placed in crates. If they are to be shipped any distance by rail, a couple of inches of straw or other suitable material should be placed in the bottom to absorb the shock.

Prepare your comb honey for the market as if you yourself expected to be the ultimate consumer. By so doing you will please your customers and your increased returns and the satisfaction which you will enjoy will more than repay you.—S. B. Bisbee in Canadian Horticulturist.

CANKER IN APPLE TREES

Canker is infecting a large number of orchards in Canada, as it is most of the apple-growing sections of the United States. There are a number of different forms of this fungus. In its early stages, canker can be noticed by a region of discolored or sunken bark. In its later stages the bark breaks away. A very common source of infection is through wounds or on the branches that have been winter-killed ,the parasites entering through the injured bark and spreading very rapidly in a single season.

Canker (Sphaeropsis Malorum)

This is one of the common kinds of canker, quite often seen on small branches where dead sections of the bark are noticeable, and it is quite destructive, killing a great many of the smaller branches.

European Canker (Nectria Ditissima)

This canker has a different appearance from the common canker. It usually has a very ugly scar with the bare wood exposed, often leaving the infected part as a large bulge on the limb in the canker area, with the area of the bare wood extending over most of the scar, the bark on the edges presenting a swollen, rough appearance. From the trees that have been winterkilled, all dead branches should be removed, as allowing them to remain on the trees furnishes a source of entrance for the parasites.

Remedy: Cut off all dead branches that are affected by the canker, using implements that have been thoroughly disinfected with copper sulphate (blue vitriol) or with corrosive sublimate solution. Paint all the large wounds with white lead and oil. If there are cankered areas, cut out these areas, cutting at sufficient distance so that none of the infection is left in either the wood or bark.

Inspect your trees carefully, and if there are dead or dying branches on them, see if they are infested by canker, and if so, be sure to have them removed. Burn all the branches removed, whether they are infected by the fungus or not, as the fungus may possibly be on them and thus may spread from them to the living trees. Never allow the ground in your orchard to be littered with the dead brush. Always remember that trees are living things, and as such should always be well taken care of.

The disease may occur at the crotch of the tree, on the limbs, and also on the trunk of the tree. In one of the bulletins of the Maine Department of Agriculture of 1910, we notice that hundreds of orchards were visited in three years, and it was found that none was entirely free from this disease. Since that time, it has had a chance to spread, and it is of the utmost importance that we should take all precautions to check this menace to our orchards.

In our opinion, the well-cultivated orchard is better able to resist the attacks of the fungi that produce canker than are the trees in an uncultivated orchard that are less vigorous and not as healthy. The healthy tree is abel to overcome the effects of the disease much better than a tree that lacks nourishment and is in a stunted condition.

We would advise cutting down badly infected trees, as they are a menace to the others. We do not believe that the badly infected trees can be brought back to a healthy condition.

MARKETING GOODS IN ATTRACTIVE FORM

While quality is an essential requirement in the marketing of any farm and fruit product, it is by no means the only factor in selling at the highest price.

First of all, the package used should be new and clean. The neater the package, the better the fruit will appear. While the products packed should be of uniform size and color throughout the package, the top layer should be arranged so as to attract the eye of the cuyer. Further the package should in every instance be well filled. The buyer is very quick to notice shortness in measure, or any deficiency in a well-topped or rounded finish. In small fruit, such as the strawberry, particular attention should be given to have every berry in perfect condition, with the calyx or hull attached. The individual fruits should not be arranged in layers in the box, nor should the top be arranged to show a uniform red color, but rather, the calyx should show in with the red. For the best effect, and for particular markets where the grower has steady customers, the berries should be graded into two sizes. This is to give uniformity to the fruit, and will make the package more attractive.

It is a well known fact that the attractiveness of a package of fruit sells it. The customers are attracted through the eye, and everything that aids in making the package attractive will increase the value of the fruit and ease in selling.

It does not pay to pack inferior fruit with good fruits, for it invariably works against the reputation of the grower. Too little attention to uniformity in pack and grading will often result in a loss to the grower.

SELECTING BEAN SEED

Every bean grower should take steps to secure good seed for next year's planting, either from his own crop or from fields which he knows to be free from anthracnose and blight. Seed from plants killed by frost before the pods are dry and mature should not be used.

The use of good seed—properly ripened, plump, intact, and free from disease—is essential for securing large yields. It is crop insurance for growers to lay in their seed while there is still opportunity to inspect the fields or they can pick from the cream of commercial stocks instead of having to take whatever may be available later.

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Seed from carefully selected, clean pods grown in one's own seed plot, of course, are safest. Once the beans have been threshed it is difficult to detect all which have come from diseased pods. It is possible, moreover, in the seed plot by planting the seed in hills and by spraying with Bordeaux mixture to protect the plants from anthracnose, even at an expense not warranted in larger plantings. The grower should see that no one moves among the seed plants while they are wet with rain or dew, when spores of the fungus causing anthracnose most readily are spread.

After the seed is threshed—and this is particularly important in the case of commercial seed—the grower should pick over his seed by hand two or three times and throw out all damaged or diseased beans and those not uniform in size and color. Even commercially hand-picked seed often contains many affected beans. While a few discolored beans are not objectionable for household use, every such seed when planted may spread disease to many neighboring plants. In purchasing beans for planting a germination test should be made and only seed of high quality accepted.

Where a seed plat is used the grower would do well to set aside and store separately with especial care the seed selected for next season's planting.

BLISTER BEETLE AFTER THE BEANS AND POTATOES

The Entomological Branch of the Dominion Department of Agriculture has recently received a number of complaints from farmers and gardeners last season, regarding the ravages of the Ashgray Blister Beetle.

It is important that crops of potatoes and beans particularly be watched for this insect, which has the habit of appearing in large numbers and quickly reducing the crop by feeding upon the foliage. The Ash-grey Blister Beetle is quite different from the well-known potato beetle, being cylindrical in shape, of a uniform ash-gray color, and in length about half an inch. In addition to potatoes and beans, peas, beets, tomatoes, clover, etc., are often attacked by these beetles.

In gardens many of the beetles may be destroyed by beating them from the plants into a pan containing water with a little coal oil on the surface. Under field conditions, however, the beetles are best killed by spraying with Paris rGeen or arsenate of lead. The following formula, which is widely used for the potato beetle, is also valuable for the control of blister beetles: 8 ounces of Paris Green and 1½ pounds of powdered arsenate of lead to 40 gallons of water. If paste arsenate of lead only is available, 3 pounds should be used with the 8 ounces of Paris Green to 40 gallons of water. Both Paris Green and arsenate of lead may be used in the well-known Bordeaux mixture, and if such is done the above proportions are suitable for 40 gallons of the mixture. If it is not convenient to combine the arsenites, use Paris Green in the strength of 8 ounces or more to 40 gallons of Bordeaux mixture or water (if used with water alone add one pound of freshly-slaked lime), or arsenate of lead in the paste form 4 pounds or in the powdered form 2 pounds to the above quantity of water or Bordeaux mixture. In severe outbreaks it is often necessary to repeat the application as the beetles which are killed are soon replaced by others.

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As blister beetles are easily disturbed, a remedy which has been successfully employed is for two or three boys, or more if necessary, to walk through an infested plot or field and wave from side to side boughs of spruce or other branches. Such an operation will drive the beetles ahead of them and when the insects come to the edge of the crop they will disperse and seldom return.

If a windrow of straw, hay or any inflammable rubbish is hearby they may be driven into the same and burned in it.

ARTHUR GIBSON,
Chief Assistant Entomologist.

PROSPERITY IS PROMISED

Ottawa, Oct. 22.—The prospect opened up for Canada by the Military Service Act is one of prosperity insured and safeguarded. The object of the Act is to reinforce our men at the front, while keeping in Canada those whose presence here is required in order that necessary business may be carried on as well as those whose going overseas would lay a heavy burden on the country through the needs of dependents.

No heavy tax on the manpower of the country will be made. The Act calls for but 100,000 men, and authorities estimate that there are in the country 400,000 of the first class alone, unmarried men and widowers without children between the ages of 20 and 34. This class may well supply most of those needed.

Men in the first class called will be withdrawn for military service only as they are required by the military situation. The process will be gradual, thus leaving a portion of the men to follow their regular vocations until such time as they are required.

The cost of the war must be reduced to the minimum by the system which sends out of the country only those who can best be spared, from the standpoint of the nation as a whole. General prosperity must also be encouraged by the safeguarding of essential industries and the retention at their work of men whom the highest interests of the country require at home.

Fruit Packages

As the Strawberry season is again approaching, how about your Boxes and Shipping Crates? We make the standard size Box and laso a 32 Box Crate. Order early and insure prompt delivery. Price on application.

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TRACTORS SEEN AT PLOWING MATCH HELD AT AMHERST

Beautiful fall weather, following a heavy down-pour of rain Thursday evening, greeted the promoters as well as the large number of agriculturists interested in the tractor demonstration and plowing match which took place at Samuel Freeman's beautiful farm on Lower Victoria street, Amherst, on the 12th. As the morning sun shone out brightly scores of automobiles and carriages came into Amherst from the neighboring districts including many from the county of Westmorland (N. B.), and along about 10 o'clock hundreds of citizens and visitors made their way in automobiles and carriages towards Mr. Freeman's farm, which is one of the finest farming properties in the county of Cumberland. Of course the chief attraction was the privilege to witness the operation of the Ford, Case, International and Waterloo tractors, the latter being quite well known to Amherst as it had been sometime ago contemplated by D. W. Robb, manager of the International Engineering Co., for his plant in Amherst to go into the manufacture of tractors and accordingly the Waterloo had been secured as a model to enable the home industry to take pattern from, but the war changed conditions and Mr. Robb dropped his plans in this respect for the present.

Your paper has already contained a detailed description of the tractors mentioned above, their many advantages being pointed out when they were exhibited at Kentville a few days ago, but it may be said all three viz: the Ford, Case and International were acclaimed with much enthusiasm by the agriculturalists of Cumberland and nearby counties.

The old style plowing match between different farmers coming from different parts of the country and nearby New Brunswick districts was hotly contested and much enthusiasm was manifested by the large crowds present. Each man used his own horses and the prizes were awarded without favor as the judges only knew the lots plowed by numbers, and it can be stated for a fact that no one would despute the decision arrived at by such competent and fair judges as F. L. Fuller and Samuel Moore, of the department of agriculture, Truro. The following were awarded the prizes:

Best ridge, seniors—1st, No. 11, Henry Blankhorn; 2, No. 2, J. Langille; 3rd, No. 5, T. W. Keilor; 4th, No. 12, C. V. Thompson; 5th, No. 8, John Barker; 6th, No. 6, Vetal Richards; 7th, No. 4, Wm. Harkins; 8th, No. 13, A. P. Elderkin.

Juniors—1st, No. 17, Courtney Lusby; 2nd, No. 20, Carl Smith; 3rd, No. 15, Manford Oulton; 4th, No. 18, Elbert Black; 5th, No. 19, Harold Black; 6th, No. 16, Arthur Fitzgerald.

Best finish, seniors—1st, No. 11, Harry Blankhorn; 2nd, No. 12, C. V. Thompson; 3rd, No. 2, J. Langille.

Juniors—1st, No. 17, Courtney Lusby; 2nd, No. 20, Carl Smith; 3rd, No. 15, Manford Oulton.

Ins and outs, seniors—1st, No. 5, T. W. K. Taylor; 2nd, No. 2, J. Langille; 3rd, No. 3, Fred Thompson.

Juniors—1st, No. 17, Courtney Lusby; 2, No. 16, Arthur Fitzgerald; 3rd, No. 18, Elbert Black.

Best crown, seniors—1st, No. 11, Harry Blankhorn; 2nd, No. 2, Lawson Lowe; 3rd, No. 5, T. W. K. Taylor.

Juniors—1st, No. 17, Courtney Lusby; 2nd, No. 20, Carl Smith; 3rd, No. 18, Elbert Black.

Best plowing outfit—1st, No. 20, Carl Smith; 2nd, No. 5, T. W. Taylor; 3rd, No. 8, John Barker; 4th, No. 12, C. V. Thompson; 5th, No. 1, Thomas Hooper; 6th, No. 13, A. Pederskin.

A special prize of $25 open to the two provinces of Nova Scotia and New Brunswick for the best plowing on the field, was won by Thos. Hooper, of Truro. Another special prize, a silver cup, for the best ridge of those competing from Cumberland, donated by W. W. Baird of the Experimental Farm at Nappan, won by Harry Blankhorn, of Nappan; the second special prize, a silver medal, donated by the Canadian Bank of Commerce, was won by J. Langille of Nappan. The ridge work of these two men was commented upon by all as being of a very high order. About 1,500 people attended the demonstration and taking all in all it was a gala day for Amherst.

One would almost have thought that a winter fair was on to see so many happy agriculturists in town, and in the evening the farmers and their friends took advantage of the many bargains offered by Amherst merchants in honor of the occasion. The ladies of the Red Cross looked after the inner man and every one enjoyed a good meal at the farm. To Professor Cumming and Superintendent Baird of the Experimental Farm, great praise is due for the success attending the occasion as well as so many Amherst merchants who generously contributed the prizes, all of which went to make the demonstration and plowing match a genuine success.

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CLASSING MEN FOR SERVICES

Ottawa, Oct. 22—Only those men found physically fit for combatant service overseas by the medical boards will be included in the first quotas called to the colours under the Military Service Act. All such men are now being placed by the examiners in Category A.

Men not in flawless physical condition are being classed as to their fitness for war service in non-combatant units, either in Canada or overseas according to the shape they are in. Such men may be called up later and re-examined or they may be called or they may be called for non-combatant services. The immeliate need, of course, is for men fit for active service.

Experience shows that the physical condition of men varies greatly; that is, a man may improve greatly in a few weeks or months. Some of those passed as fit by the medical boards recently had been rejected by the doctors when they had applied for enlistment in the volunteer forces.

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DAIRYING.

THE BROOD SOW AND HER LITTER

Those who have been long engaged in the breeding of swine know that the new-born pib is the main stay of hog production. The much needed expansion of the industry depends largely upon the number and quality of the pigs that are raised. Many pigs are lost and many are developed below their capacity because of careless treatment during their first weeks of life.

Happily, the late-summer and fall-farrowing sows are usually in better health and more vigorous than those that gave birth to spring litters, consequently little trouble is to be feared. The run of lush alfalfa, clover and blue grass pastures and the exercise obtained by foraging contribute most liberally to an easy parturition and a robust litter. The greatest danger lies in the possibility that the sow may smash her pigs. This misfortune is not entirely preventable, but the following conditions will reduce it to a minimum:

1—Have the sow in good physical condition at parturation.

2.—Give the sow a small feed of shorts and skim milk slop for two days before parturition.

3—In the farrowing pen, place a 2x4 inches scantling 8 inches from the floor and 6 or 8 inches from the wal lto prevent the sow from lying too close to the wall.

4—Provide the sow with a small amount of clean bedding.

5—Be on hand during the act of "pigging" to lend assistance in case of abnormal presentations.

6—Remove the mucus from each pig's nose as soon as it is born so as to allow breathing.

7—If the sow is feverish, restless, and consequently irritable, place the new-born pigs in a basket warmed by a hot-water bottle until the sows all have finished farrowing when the youngsters can be placed to the teats without having been injured.

8—Remove the after-birt hand soiled bedding from the pen and bury it.

9—Do not disturb the sow by offerinigi ihieiri iiiiiiii lq'l etaon etaoinn ing her feed for twelve hours after farrowing, but provide water to quench her thirst.

When twelve hours have elapsed give the sow a thin slop of shorts and skim milk. A 250 or 300 lb. sow should receive two pounds of shorts mixed with one half gallon of milk for the first meal. Then as each day passes, add two pounds of shorts and two pounds of milk for each pound of shorts until the sow is receiving from ten to twelve pounds of shorts plus the milk in the proper proportion. Then begin to reduce the shorts at the rate of one pound daily replacing it with ground barley or corn mea luntil the ration consists of one half shorts and one half barley or corn plus the milk. Therefore, in fourteen to sixteen days the sow will be on full feed.

As soon as the pigs are able to move about, all should be placed on pasture, for it is indispensable to economical growth. If scours appear among the pigs, reduce the sow's feed, give her a dose of epsom salts and each pig a teaspoonful of castor oil. If lumps develop, the remedy consists in reducing the sow's feed compelling the pigs to take plenty of exercise. The pigs should be induced to eat as quickly as possible. This can be done by feeding the sow in a low flat trough into which the pigs will soon learn to go. This accomplished, provide a separate trough enclosed within a creep, so as to exclude the sow and give the pigs a feed of shorts and ground oats mixed with ski mmilk. Keep all the troughs clean and so prevent the pigs from swallowing filth and germs which cause digestive disorders.

The care during "pig-hood" determines the kind of hog that will be produced in the end. The milk-fat must never be lost, nor the pig's capacity, to consume and assimilate food, weakened. Always use judgment in feeding and tereby prevent the pigs from acquiring the habit of getting "off feed." Plan to feed so as to grow strone bone and muscle and to that end use an abundance of bone and muscle producing feeds. Insist upon plenty of exercise, but provide shade. Remember that a badly raised pig never goes into a pork barrel showing a profit, whereas a well raised pig will amply repay for the time, feed and labor invested.

Wm. Hislop,
Animal Husbandman,
Wahs. Exp. Station.

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CALF OF TODAY WILL BE THE COW OF THE FUTURE

The first milk, or colostrum, as it is called, should always be given to the young calf. It has a peculiar laxative effect which is especially desirable. It must be remembered that the little heifer calf will soon grow to take its place in the dairy herd, and its success as a milker will depend a great deal upon its digestive capacity and the functional perfection of its digestive organism. A dairy cow with large barrel and well developed capacity, together with healthy normal physical condition, is invariably a good milk produced. A cow inherits most of her milk-producing qualities from her ancestry. Breeding plays an important part in the development of the herd through the heifers, however, breeding and ancestry alone are not sufficient. The young heifer calf must be fed and handeld in such a way as to bring out the very best qualities that are in her.

The first step in her raising is the clearing out of her digestive tract by means of the colostrum. This can be done either by allowing the calf to remain with the dam for the first day or so, or by drawing the milk and immediately teaching the young calf to drink. Most dairymen prefer to allow the little calf to remain with its dam from 24 to 36 hours, then remove it to separate quarters out of sight and hearing of the mother cow where possible.

The flow of milk from a good dairy cow is considerabl ygreater than the calf can manage. The question naturally arises as to how soon the new milk is fit for use and the market. Ordinarily the seventh milking after calving can be saved. A test that can be applied to make sure of its fitness, is to take a small portion of the fresh milk and heat it to a boil. If it is not yet ready for use it will curdle or thicken and in that event should not be used.

As long as the calf is fed whoel milk it is better to use the milk from its own dam, feeding it as soon as it is milked and before it cools. Cold milk is apt to derange the calf's digestion. While the milk should not be frothy it is better to feed while it contains the original animal heat rather than artificial warming.

Sudden changes and irregularity in feeding will surely cause digestive troubels. Dirty feeding pails and insanitary surroundings are sure to cause scours. Wooden troughs for feeding milk should be avoided entirely as they absorb flies and collect dirt and germs. The feeding pail should be thoroughl ycleansed with scalding water and allowed to dry in the sunshine. Musty or dirty hay should not be fed but the calf should be given a fresh supply of alfalfa or clover hay each day as soon as it begins to eat. A handful of bran or ground oats should be placed in a clean box manger, after it is a week or so old and it will soon begin to nibble at it. Such

feed is better if placed in the box dry and after a taste is once acquired for it, then allow no more at a time than will be cleaned up each day.

Skim milk fresh from the separator can be introduced into the feed after the calf is two weeks old, but the substitution must be gradual and the temperature kept the same. A sudden change may cause scours. Skim milk for the growing calf will produce equally as good results as whole milk. The fat taken out by the separator can be supplied by grains while the protein so necessary to its rapid and healthy growth still remains. If desired, a little flaxseed meal or corn mea lcan be added to the ration to supply the fats removed by the separator.

To develop the heifer into a good dairy cow and bring out the very best producing qualities she has in her, it is necessary to give her the very best of care and considerable treatment and feeding. The different organs of her body must be kept in perfect condition and her digestive capacity encouraged. Plenty of fresh water should at all times be within her reach. The dairy cow of the most pronounced type is built mainly around two points, the digestive and the milk glands or udder. The one digests and assimilates the food while the other converts it into milk. The dairyman should work toward the development of these two points from the very beginning. Careful feeding will improve the one, while gentle massage before the first calving period may help the other, besides getting the heifer accustomed to being handled so that milking will cause the least excitement possible. She should at all times be given gentle and considerate treatment. At no time should the dairyman lose sight of the fact that the little calf of today may soon be the best cow in his herd and that looking toward this end the calf should be handled just as carefully as the finest cow in the herd. P. H. E.

COST OF DAIRY HEIFER

What does it cost to raise a dairy heifer to one year and to two years old? This question is answered in the September Monthly Bulletin of the Ohio Agricultural Experiment Station, in which the claim is made that dairymen usually underestimate th evalue of heifers.

Feed alone at medium prices costs about $33 for the first year and $28 for the second. Cost accounts of raising calves by the Ohio, Massachusetts and Connecticut Experiment Stations and the United States Department of Agriculture were used as the basis for these figures.

Labor, interest and miscellaneous overhead expenses must be added to this feed cost. The two-year-old heifer must be credited with a calf and the manure produced during two years. The net cost at medium prices is then given in the bulletin at $44.77 for the first year and $29.08 for the second. At present high prices, the net cost for two years rises above $100.

Economy in dairying and care in breeding only good stock are, therefore, necessary. The heifer from a low-producing dam and an inferior sire will not return the cost of her production and maintenance.

BALANCED RATIONS SAVE DAIRY FEEDS

Dairymen can solve the feed shortage by the same method that people are using to solve the food shortage. They can make what they have, go further. If food economies can result in feeding more people with the same amount of food, the same feed can feed more cows.

No one advocates the killing of part of the people in order to provide an abundance of food for the rest. It is not more necessary to kill large numbers of dairy cows because of a short feed supply. Such action, moreover, taken in the face of our national need for dairy products, would be calamitous.

Dairymen who feel the pinch of feed shortage will do well to give special attention to balancing their herd rations. A balanced ration is an efficient ration. It means making the most of the feeds used.

Unless a proper balance between the protein and fat and carbohydrates contents of the ration is maintained, waste is certain. This waste may be either in feed, in productoin, or both.

When the production of a cow is limited by the amount of protein in her ration, the addition of more carbohydrates and fat does not help the situation. More fat and carbohydrates in that case only increases the amount of fat the cow is able to put upon her back.

This extra fat constitutes still another waste of feed. The dairy cow does better work when not in a beef-fat condition. Not only does extra fat on her back mean lost energy in putting it there, but additional lost energy in vitalizing and maintaining it.

Though seldom the case, carbohydrates and fat may be the limiting element in the ration while there is an excess of protein. This is more serious than an excess of carbohydrates and fat, for protein is more difficult and costly to obtain.

The fine point in feeding dairy cows is to use such feeds in such amounts as will give the greatest production at the most profit. This calls for balanced rations. With feed prices at their present altitudes, it will pay dairymen to make a special study of their feeding practices.

VARIATION IN COLOR OF BUTTER

Why is butter yeliow? Why does it vary?

Chemists investigated the cause of this variation in color as long ago as 1830, but it remained for the dairy department of the University of Missouri College of Agriculture to determine the real source and nature of the natural color of dairy products. Three years of investigation not only showed the cause of the natural color, but made clear the nature and source of the yellow color that is found in the body fat of cattle. The coolr in the tallow is exactly the same as that found in butter. Cows that give yellow butter have yellow body fat, while those which give a whiter butter have whiter body fat. The coloring matter in both cases is carotin, so-called, since it was first found in carrots. The yellow coolr in milk and butter is not made by the animal, but comes from the feed. This coloring substance is found in all green leaves, which accounts for the yellow butter i nsummer. By continued feeding of feeds free from coloring matter, it was possible, in the experiments conducted by the college, to obtain white butter from a Jersey cow.

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LIVE STOCK.

SHEEP RAISING IN CANADA

H. P. Timmerman, Industrial Commissioner, C. P. R. analyses the Situation

The Sheep population of the World numbers well over Six Hundred Million, and out of twenty-five countries Canada is near the foot, being twenty-second with 2,175,302, Australia coming first with 85,057,402. The decrease in Canada in the number of sheep between the years 1901-1914, the most recent figures obtainable, amounted to 334,937. Between 1900 and 1910 the number of sheep in the United States decreased 8,896,266, being given as 52,838,748 in the latter year.

The number of sheep per 1,000 inhabitants in 1914 in Australia was 10,970; Ireland 823; Great Britain 578; United States 575; Canada 302.

The number of sheep per 1,000 acres of productive land in 1914 in Australia was 709; Great Britain 509; Ireland 192; United States 60; Canada 20.

These figures show to what extent the number of sheep in Canada might reasonably be increased, but instead we seem to be killing off the lambs and sheep very rapidly. The number slaughtered under the Meat and Canned Foods Act 1907 amounts to nearly 25% of the whole, not taking into account the farmers killing.

Canada's free imports of wool amounts to over six million dollars per annum, and of Wool Manufacture nearly Twenty-five Million Dollars per annum.

Since the beginning of the war, raw wool has increased over 100% in value, being now worth about 60 cents per pound, but this increase in value is partly due to better grading and co-operative marketing, as well as the introduction of pure bred animals. The fault having previously been the want of preparation of the wool bringing it into ill-repute for manufacturing purposes and cross breeding which produced a medium and coarse wool not so valuable as the pure bred. The production of the latter, while improving the wool, is said to lower the standard of mutton characteristics, but the introduction of pure bred animals for the finer grades of wool is not likely to be so extensive as to affect the meat production, and larger profits are to be obtained from wool rather than from mutton.

Of Canada's wool production which amounts to about fifteen million pounds per annum, the graded wool offered for co-operative sale in 1916 amounted only to 1,721,598 pounds, a great deal still being marketed in an unfinished condition, wool being simply wool to the ordinary farmer, and the educational work now under way should be supplemented by every reasonable means.

An incident showing what the Railway may do and the good effect produced, was the arrangement made by this Department for free short courses to be given by the MacDonald College staff between Megantic and Waltham in 1914, in which the sheep industry was made to feature very prominently. As a result of this trip Pure Bred Sheep Associations were established at nine points, with a membership of about 1200 and the wool clip of last year was increased over 20,000 fleeces from the product of pure bred sires immediately afterward distributed from the College Farm. It is desired now to extend these operations, and I have in hand with the College and Provincial Authorities the running of Sheep Sales Cars over the same route then followed, these to be advertised as stopping a certain day at each point in order that pure bred animals picked up may be disposed enruote.

The difficulty now is found to be that the farmers' are unable without considerable expense to obtain better stock, this, in most cases, preventing them from going into the business.

Ontario seems to be better provided in this respect, but we may find it profitable to extend operations to New Brunswick and along the ilne of the D. A. R. in Nova Scotia, after we see the further result of it in Quebec.

Another matter bearing upon the raising of sheep is that of the dog nuisance. While in Eastern Canada the wild animals are not so destructive as in the West, there are more dogs, and heavy losses have occurred.

Quebec has recently adopted an admirable law, which places the responsibility upon the Municipality to the extent of two-thirds of the value of the destruction by Dogs, and this is having a pretty good effect upon the owners of these animals. The Act recently passed by the New Brunswick Legislature makes this branch of animal industry much more secure than in the past from the dog nuisance.

To show how sheep raising is being taken up in the Western Provinces—During the week of June over 25,000 sheep were sheared at the Lethbridge Exhibition grounds. The work was done by machinery, one man being able to handle on the average 200 sheep per day, the cost being 13 cents per capits. The wool, which was of the highest quality, averaged 8 pounds per fleece and several owners disposed of their clip at 56c per pound, an average of $4.48 per fleece. The increase in the number of sheep in Lethbridge district this year is estimated at 80%. Up to July 19th, 24 carloads of wool had been shipped fro mthe district this year and there were six more to leave immediately; Lethbridge wool shipments are estimated to total 1,200,000 pounds, which, at any average price of 55c per pound approximates $650,000.

H. P. Timmerman,
Industrial Commissioner, C. P. R.
Montreal, P. Q., August 8, 1917.

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REGULATIONS RE SHEEP

I beg to inform you that the United States Bureau of Animal Industry has issued the following new regulation governing the importation of sheep from Canada:—

"All sheep imported into the United States from Canada for breeding, grazing or feeding must be inspected at the port of entry by an inspector of the Bureau of Animal Industry. They must also have been inspected by a veterinarian in the employ of and receiving a salary from the Canadian Government, and be accompanied by a certificate signed by him stating that he has inspected the sheep and found them free from disease, and that no contagious disease affecting sheep has existed in the district in which the animals have been kept for 60 days preceding the date of importation. The owner or importer shall present an affidavit that said certificate refers to the sheep in question. Any such sheep which are unaccompanied by the aforesaid certificate shall be subjected to a quarantine of 15 days."

It will be seen that the necessity for dipping Canadian sheep for export no longer exists. They will be admitted to the United States when accompanied by the proper health certificate, and sheep men throughout Canada, who have been engaged in the export trade, will welcome this change as removing an impediment to their business. It is also a tribute to the healthfulness of Canadian sheep and their freedom from Sheep Scab.

METHOD IN BRITAIN OF IDENTIFYING BEST ANIMALS IN THE FLOCK OR HERD

Breeders of pure bred sheep in Britain are very particular about the identification of the offspring of their registered stock. They consider this of the utmost importance, both for the breeding of their home stock, as well as keeping up the demand that there is for the stock in Australia, New Zealand, South Africa and the Argentine. In the breeding of their home stock they could not, without marking the lambs, intelligently breed along the rules that guide them in line breeding, and in regard to the overseas demand, indiscriminate breeding would also result disastrously to that enterprise. Without identification marks many good animals would be lost to the breeds, and correct registration becomes impossible.

Selection and culling is the chief medium whereby a farm flock or a breed is improved or kept up to the standard of the brede. Sheep are the one calss of animal that are difficult to spot or identify without distinctive marking.

Deterioration becomes rapid if the selection is left to guess work, either with the males or females of the flock. Without a definite plan, identification becomes troublesome and is thus not seriously undertaken by the average breeder. The young things grow up beyond recognition, often entailing financial olss to the careless breeder and greater loss to whole flocks and herds of the pure bred interests. Breed Associations in Britain safeguard their own interest by enforcing the rule of marking and correct registration.

The use of ear tags or buttons have been discontinued. The ear of

the sheep is the only place where marking becomes lasting and practical. In show sheep this part of the anatomy gives evidence of breed quality, and to make identification easy the ear tag has to be put on when the animal is young. The growing cartilage is therefore spoiled; the ear gets dwarfed and twisted, and points are taken off in the value as a prize getter, or even in the sale ring where breed points count. Also the tags often get torn out, particularly if there is wire fences around. This makes a painful slit in the ear, which is at once a disfiguration and a loss to the breeder when he is selecting his animal for show or sale. Tags have now been discarded as non-efficient, troublesome and expensive.

The system adopted now is that of small notches, and reference to the accompanying will simplify explanations or directions. Notches in the left ear stand for units, while those on the right ear stands for 10's, and the holes in the ear for 100's. By a process of addition any number can be arrived at, up to hundreds which will generally meet with the desire of breeders in selecting special animals for show, sale or breeding.

A notch on top of the left ear near the head is No. 1, and the notch in the middle of the top of the left ear is No. 2, the notch on the top of the left ear is No. 3. The notch under the left ear near the middle is No. 4, and near the head is No. 5. By using two notches individual numbers up to nine are secured, thus, 5 and 1 are u, 5 and 2 are 7, 5 and 3 are 8, and 5 and 4 are nine.

The 10's in the right ear come just as the units in the left. By a combination on both ears it is easy to count up to 100. For instance a notch on the top of the left ear and the same on the right ear near the middle make 22.

A hole in the left ear is 100, a hole in the right ear is 200, and in both ears is 300. These markings can be made the day the animal is born and gives a sure method of identification until the day of its death. It can be used on any animal irrespective of its color.

All the implement that is necessary for the work is an inexpensive punch. There are some who become expert in the work and can mark them with a pen knife, but the punch gives notches of uniform size, and makes the operation simple and of easy accomplishment at the first trial.

To further facilitate the work of identification and registration a private record book is kept, from which is filled out applications for registration. For instance an entry in the private book may show that Shropshire Ram No. 9, born April 14th, 1916; sire 18366, dam, 24017. When the registration slip is returned it bears the private No. 9, and the registration number given to the animal.

Even the breeders of sheep that do not wish to go tre extreme limit of registration, will find it profitable to ear mark and take private note of the lambs as they arrive. No breeder of sheep can intelligently conduct sheep breeding operations that does not take this precaution. By it, a breeder can classify his own strains and breed accordingly. It is the only way that a particular type ca nbe set up, and any sheep breeder knows that there are strains superior to others in the same breed and these should be all marked at infancy, so that they do not become lost, or that the qualities of the strain be upset and virtually lost by outcrossing with an inferior strain in his own flock, or that of the flock fro mwhich he procures a change of tup or ewe.

PROPER AGE FOR CALVING

The most desirable age at which to have heifers calve is a very important question. So says Prof. G. C. White of the Connecticut Agricultural College. In a great many herds, it is certain that the method of raising heifers is not such as to permit full development of their inherited powers o fproduction. It has been shown that the larger cows of any breed are capable of higher and more profitable production than those of small to medium size. The extra capacity is a favorable point, providing they are equal in other respects.

For the most part, the belief is very common that it is necessary to have cows calve early in order to stamp upon them dairy qualities rather than tendencies for beef production. Some practical men discovered in their own experience that this was not true, and recent experiments also bear upon it. The belief that roughage should be fed to develop digestive capacity is also common, but it has been found that heifers raised with much in the way of concentrates, and with small amounts of roughage, were as capable of consuming dairy rations as heifers raised almost exclusively on roughages.

Aside from the question of cost, the age is of little consequence. The aim should be to develop big, strong cows —and the procedure may depend upon conditions. If concentrates are used liberally, the rapid development will permit of earlier breeding. If the use of concentrates is limited, the first calving period shoul dbe postponed.

In general practice, the cows must pay the bills, and this is of primary consideration. Roughages, so far as possible, must therefore be made use of, and heifers must calve before the returns will commence to come in. Records of production from the Connecticut Agricultural College herd of Holsteins show the value of heifers well developed at calving time.

The age of first calving varies from one year and eleven months to three years and six months. The heifers when not on grass, are fed three to six pounds of grain daily, with hay and silage, and are kept in thrifty, growing condition. They are divided into two groups, those calving at 30 months or less and those calving at later than 30 months. The average age of the early calves is two years and one and two-fifths months, and of the late calves, three years and one month.

The average production of the early calvers' first period was 7,691 pounds of milk and 273 pounds of fat in an average of 356 days. The late calvers produced 13,128 pounds of milk and 443 pounds of fat in 365 days. The second milking period, the early calvers produced 9,684 pounds of milk and 342 pounds of fat in 365 days; the late calvers produced 14,682 pounds of milk and 473 pounds of nfat in 365 days. In the third period, the early calvers produced 13,552 pounds of milk and 467 pounds of fat in 360 days; the late calvers (only one complete) produced 14,236 pounds of milk and 520 pounds of fat in 365 days.

In the early group, none have produced over 18,250 pounds of milk. In the late group, three have exceeded this, one with her first calf. Two of these heifers have made over 20,000 pounds of milk, one with the second calf. At least two other late calvers have the capacity to produce over 20,000 pounds. It is not probable that any of the early calvers will do this unless one now milking in her first period, having calved at 30 months of age, may some time accomplish it. She will be given a long dry period, to permit of full development.

For various reasons it is becoming more and more important for dairymen to get the most efficient production from their herds. In herds of doubtful dairy qualities, there is good reason to have cows calve early, to find as soon as possible if they are worth keeping. In a herd of dairy quality of medium to high order, more attention should be given to full development of the heifers in size and capacity for efficient and profitable production. Holsteins should calve not earlier than 30 to 32 months of age.

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The Standard not only skims closer than other machines but it gets the richest, highest quality cream. Ordinary machines will not do both. "During the past two years," writes one of the principal Creameries of Canada, "the **quality of our products has risen** in a surprising way, and we can obtain a **higher price for our butter.** The reason for this is undoubtedly due to the **increase in the number of**

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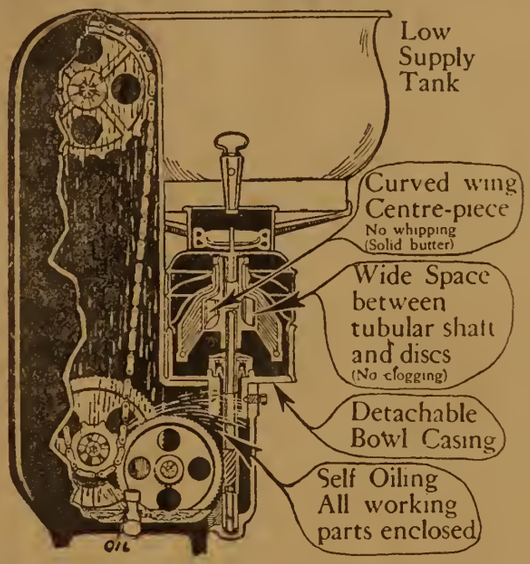
On page eleven of our latest catalogue you will find positive proofs, repeated over and over again, that the Standard skims down to one-tenth pound of butter-fat per 1000 pounds of milk skimmed.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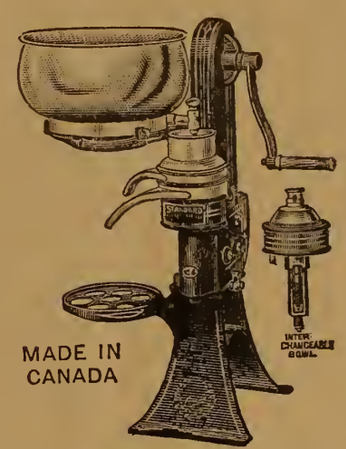

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THE HORSE

YOUNG COLTS THAT SURVIVE SHORT TIME AFTER BIRTH

The past foaling season was a disastrous one to many owners of mares in a wide-spread territory and they are looking for the causes of their losses. These are not far to seek in many instances, but in others are difficult to find and we fear that some of the owners are placing the blame where it does not actually belong. The subject therefore is well worthy of consideration here and we hope to be able to throw light upon it which will help to prevent similar losses another season.

In perhaps a majority of cases the foals have come into the world weak and unable to stand up and suck. Such foals usually have large, fat flabby navel cords. On the contrary the foal that is quickly on its feet and nursing has a small, or "shoe-string," navel and such a cord is not so liable to infection. The large cord quickly becomes infected, or the foal having such a cord is weak in constitution, lacks resistant power and so more readily contracts infection of the navel and joints and succumbs to this disease which is termed pyemic arthritis.

In your experience it is quite usual to find that the foal with the small cord was sired by a grade or scrub stallion that had worked every day, or been so thoroughly exercised every day that he was at all times in muscular condition and able to do the kind and amount of work which would be expected of his progeny when developed. Foals with thick, flabby cords commonly are fat and flabby and correspondingly weak in constitution and such foals often are the offspring of stallions that have been pampered and overserved, or of mares that have been overfed, underworked or exercised and kept too much confined to the stable. Then there is the foal of the mare that has been overworked, underfed and kept in unsanitary surroundings. That foal lacks vitality at birth and, like the fat, flabby foal, may easily contract navel and joint disease, or simply succumb from want of strength and ability to stand up and suck.

Let every horseman do all in his power to have the colt born into the world with a "shoe string" navel.

To that end we would suggest the necessity of working or exercising the sire so thoroughl ybefore and during the mating season that he will be in muscular condition, fit to work hard and having every organ in perfect health. To have the stallion in such shape it should be evident that he must not be maintained in "show condition." Unfortunately if one "renders out" the blubber and fat of show condition there may not be much left of the prize winning stallion and the buyer, who has paid a big price for the horse, is afraid to put him into work condition for fear he will look so ordinary that the owners of mares will not give him profitable patronage. The most desirable and profitable sire is the one that is a grand, good horse when in work condition. Any stallion that is not of such good individual type and character as we have suggested here is a poor apology for his breed and pedigree and this alone should bar him from patronage.

Strong Mares Essential

Many a pampered purebred is a menace and detriment to the neighborhood in which he is used, and it is because such purebreds are too commonly and notoriously inefficient as the sires of stand-up-and-suck foals that grade and scrub sires persist and obtain patronage. It is equally detrimental to pamper the mare. She should be kept in good muscular condition and healthy, by ample work or exercise, every day throughout pregnancy and should be adequately fed upon sound, wholesome, plain feed. Mated with a stallion similarly managed and fed and the foal from such a mare can scarcely fail to come into the world strong, able to stand up and suck and able also to ward off infection of the navel and joints.

The sire often is blamed for the weak foals when not really to blame. This fact cannot be lost sight of and should be carefully considered. The stallion has done all that can reasonably be expected of him when he gets the mare in foal. The stallion owner owes it to the patron of his horse that the stallion shall be in fit condition for procreation, sound, healthy, adequately fed and not overserved. It will be unfair and dishonest for the breeder to have his horse in any other condition than this; but no blame should attach to him, if his stallion is in the right conditoin as we have outlined and the foals he begets come into the world weak and puny, or quickly die of navel and joint disease or some other disease common to the new born foal.

The mare is responsible for the development and care of the foal, begotten by the stallion that is in fit condition, and this the mare owner should understand and abide by in practice. Yet he too often blames the sire when he has ill-fed, over-worked, abused or injured his mare by ignorant or careless management. The fact that the sire is strong an dprepotent will not protect the foal and bring it into the world strong and able to stand up and suck if the pregnant mare is fed on weathered straw, hay, or other unsuitable or unsound feed, made to haul logs or other heavy loads on a bare road, or made to haul manure over soft land, or do other work too hard and too straining for a pregnant mare to safely accomplish. Then too the mare owner should be careful to have the foal born in a clean place.

ANSON SECOR.

REMEMBER THE HORSE ON HOT DAYS

If the following precautions are carefully observed, there will be little danger of over-heating horses during hot weather.

Give a pailful of water to each horse in the middle of the forenoon, and the same at four o'clock in the afternoon on a hot day. Be careful with the horse that is a little out of health if you are working him on a hot day.

Look out for a horse that, after sweating, suddenly stops sweating. Put such a horse in the shade as soon as possible and give a moderate drink.

Do not put a horse not in good condition for hard work in the center of a three or four horse team in hot weather.

Work carefully on a hot day when the atmosphere is moist and heavy.

A horse can hardly get too hot to water, but one must regulate the amount by the temperature of the water.

In case of an attack of over-heating, the horse should be taken to the shade as soon as possible. A treatment of the surface of the body, particularly of the head, with cold water should be given until the temperature is within a degree or two of normal.

Stimulants, such as whiskey or brandy, well diluted, should be given as early as possible. In most cases it is better to plan to avoid overheating than to plan to treat the horse for it.

When horses are sweating freely there is no danger in giving water and no great danger of becoming overheated. However, if horses are panting, in which case sweating may suddenly cease, there is great danger.

CORNS

There is no ailment so common to horses feet as corns, and no ailment in which so little is done to prevent or alleviate the horses suffering. Fully nine teenths are from this source. They are the result of uneven pressure of the shoe, too much bearing on the quarters, especially the inner one and too heavy bearing on the heels. This results from shoes being left on too long without being reset. It is necessary, as a rule, to shoe horses' feet, and in order to keep them healthy the shoes should be reset about once a month, the sole and wall reduced to their proper size, heels opened, and the ragged surface, if any, trimmed off the frog. When the hoof is bruised by careless shoeing or other similar cause, a pink spot will appear at the place varying in size from a 10 cent piece to a quarter of a dollar. If the bruising is light, the corn may become hard and remain a constant source of lameness. This is probably the type of the corn your mare has got. In severe cases where the corn cannot get free through the

Dr. J. Woodbury's Horse Liniment

THE INFALLIBLE REMEDY

For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

Bear River, N. S.
Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say that no lumberman should be without it.
Yours truly, Clarke Bros.

Hubbard's Cove, N. S.
Dear Sirs:—I have used Dr J. Woodbury's Horse Liniment in my stable for years and consider it the best liniment on the market for both internal and external use.
Yours truly, C. C. McLean.

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This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.
Newton Lee, Owner "All Right" 5817.

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Dear Sirs:—Kindly send me 6 dozen bottles Dr. J. Woodbury s Horse Liniment. I have not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.

Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.

Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse, I recommend it to my friends. E. J. Anderson, Truro. N. S.

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hardness of the wall of the hoof, a grittor may be formed. By applying the hand to the foot you may notice extra heat in the sore part and by tapping the hoof, gently with a hammer she will flinch when the sore part is tapped.

After the shoe is removed, if you find any indication by pink spot or heat, that it is a corn that is producing the lameness, pare out the quarter well, and put the foot in a linseed poultice made up soft with hot water. Leave it on twenty-four hours, then renew it. Cut the hoof well away where the corn appears and after the matter escapes ,pour in some hot tar. Extra care will have to be taken of the feet that have once been affected with corns, to keep them soft. Many substances used for this purpose are injurious to the hoofs by making them brittle. Bathing the hoof occasionally in warm water is about as good as any method.

A horse that has chronic corns can be cured by shoeing him with shoes that let the heels come to the ground and take the wear. This will allow the quarters to spread out, which in time will grow the corns completely out.

Horses are like humans in regard to their tendency in having corns, but they are often inhumanly treated in the matter of shoeing. A little consideration and comparison between well fitting and ill fitting pinching shoes on feet affected with corns, should be given to the horse that is pained and lame while doing his daily round on the farm.

SORE SHOULDERS WILL REDUCE LABOR

Many sore shoulders may be prevented by taking enough time to see that the collar and hames are properly fitted or adjusted. Daily attention to the bearing surface of the collar and its pad at the top will also prevent many sore shoulders and necks. The collar must be kept scrupulously clean. This can be easily and quickly done by wiping or sponging the surface of the collar as soon as it is removed. This will remove all sweat and other accumulations that act as an irritant an dproduce sore shoulders.

Many other sores can be prevented if the horses' shoulders are kept clean. The curry comb and brush used every morning are great aids in this direction. Much good will also result if the horses' shoulders are sponged with cold water every evening when the collar is removed. The application of the cold water reduces inflammation and cleanses the skin thoroughly. In addition, this treatment will also have a tendency to harden the skin and make chafing less likely to occur later in the season when warmer weather and flies arrive.

If a horse already has sore shoulders it is the owner's duty to make a serious attempt to heal them. The sore should be cleansed daily with a solution of sheep dip, two tablespoonfuls per quart of water. After this has been applied, the sores may be covered with a thin layer of ordinary white lead ground in oil the same kind that is used for mixing paint. One pound of the lead will be sufficient to alst during the entire summer and will cost but a few cents. Its use is usually attended with very satisfactory results, providing it is faithfully and regularly applied.—C. C. Lipp, V.S

I had a horse that was nervous and high strung and would not stand to be hitched up. I made a practice of tying the horse to a post while being hitched and leaving her there for a few minutes. Two or three months' work of this kind cured her. I kept her tied and never allowed her to start as soon as I had finished hitching—W. J. Blackham.

I read your S O S call as to how to hitch up a very nervous horse that insists on starting before you are ready.

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---OCTOBER---

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I had trouble of this kind, and finally found that it was due to a too-tight bridle. The horse may also be checked too high, the bit may be too harsh, some other part of the harness may be too tight. These things make a horse nervous. My horse was, I think, as nervous as any horse could be, but by handling him kindly and talkink to him gently, so that he knew he would not be harmed, he was quieted down and will stand without any trouble until I am ready to go—A. C. B.

Kindness is the best remedy I know of for a nervous horse. Always speak gently to her both in the harness and in the stall. An occasional piece of apple or lump of sugar fed from the hand will go a long way toward winning the animal's confidence, unless she already has been badly spoiled. A nervous animal that won't stand while hitching should be worked every day, and is best handled by the same person if possible. Quieting them down is a gradual process, and one of kind treatment.—B. F. Taylor, Farm & Home.

One day two laborers were discussing the wiseness of the present generation. Said one:

"We be wiser than our fathers was, and they was wiser than their fathers was."

The second one, after pondering a while and gazing at his companion, replied:

"Well, Garge, what a fule thy grandfather must a' been."—

Child Was Nervous, Irritable, Tired Out

She Had No Appetite, and Her Complection Was Pale and Sallow.

How many parents realize the strain which going to school means to the child who is naturally nervous and of delicate health?

You see them come from the schools daily with pale faces, many wearing glasses, and looking tired and worn. At home they are irritable, do not sleep well at nights, and are upset by a little extra excitement.

If they are to grow to healthy manhood and womanhood their systems must have attention now. Such treatment as Dr. Chase's Nerve Food does wonders for children in this condition. We are constantly receiving letters from grateful parents telling what the Nerve Food has done for their children. This one is a fair sample:

Mrs. Stephen Hartman, Italy Cross, Lunenburg Co., N.S., writes: "My little sister at eleven years of age became nervous, irritable and seemed all tired out. She had no appetite, was lifeless and drowsy and her complexion grew pale and sallow. Finally she had to keep her bed and have somebody with her all the time. She was afraid of everything, would get excited and tremble till the bed would shake. As she seemed to be getting worse under the doctor's treatment, mother decided to try Dr. Chase's Nerve Food. After she had used about four boxes, improvement was noticeable and it was wonderful to see how much brighter and stronger she grew week by week. She used ten boxes altogether and they cured her. She got fat and rosy and went to school every day with an ambition that she never seemed to have before. I do not hesitate to recommend Dr. Chase's Nerve Food to anyone, for it was indeed wonderful what it did for her."

Dr. Chase's Nerve Food, 50c a box, 6 for $2.50, all dealers, or Edmanson, Bates & Co., Ltd., Toronto.

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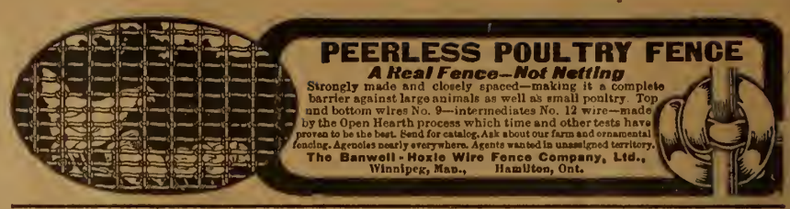
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Winnipeg, Man., Hamilton, Ont.

POULTRY.

SOME POULTRY PARASITES THAT RETARD PROFITS

Many poor egg records and many unthrifty flocks result from the presence of lice and mites on the fowls. Scarcely any flock is ever wholly free from vermin. In small numbers they do little damage except to cause annoyance to the fowls, but they are rapid multipliers, especially in warm weather and unless periodically checked they become so numerous that positive loss results.

A man may start in the poultry business with everything new and clean, but in some way or other vermin soon manage to put in an appearance. Sometimes one cannot find any lice on his fowls, or at least not enough to make the matter seem important. It is well to remember, however, that every adult fowl is more or less lousy, and should be treated with suspicion, and examined occasionally, as vermin often appears unexpectedly. In small numbers they present no particular problems, but in hordes the process of extermination must be quick and drastic.

There are many different types of vermin that prey on domestic fowls, but for all practical purposes they may be divided into two main classes. The first is the body louse, which stays on the fowl's body nearly all the time, and may be detected traveling around over the skin, especially on the neck, under the wings or among the fluffy feathers under the vent. The second class consists of the red mites or lice which infest poultry houses and their fixtures, hiding in cracks and crannies during the day and coming forth at night to seek their prey.

The latter are the most annoying. None of the mite varieties breed on the bodies of fowls, but throughout the house and fixtures, so that applications to the fowl's body have no effect upon their destruction. They ravage their victims at night like the bedbug. In dirty nests, cracks of the walls, underneath perches, etc., they multiply so fast that sometimes all of the pests can not find a hiding place and cover the surfaces.

All fowls and birds are bothered with mites of a size in proportion to the size of the bird; quail have them about half the size of chickens, while smaller birds have them so fine they look like dust. All are blood-suckers, thus lowering the vitality of the fowls and often bringing disaster.

Mites are white or grayish in color, except when filled with blood, when they are reddish. While the mites themselves can usually be detected if one watches closely enough for them, a plain indication of their presence is their excrement—little grayish patches like fly specks, on the roosts and adjacent parts whic hthey traverse.

These mites are such rapid breeders that it is hard to totally exterminate them, but their numbers can be kept rather easily within the bounds of safety. Disinfecting, whitewashing, scrubbing and cleaning the nests, roots and all parts of the house help keep them down, if performed thoroughly and at frequent intervals.

Common kerosene oil is fatal to mites and should be liberally painted or sprayed everywhere vermin could possibly find lodgment. This is the commonest and cheapest method, though the liquid lice-killing preparations now on the market offer the surest method of extermination, for they give off fumes that penetrate everywhere and which are as fatal as liquid itself. All liquids may be applied with a small spray pump, brush or broom, as is most convenient. As regards the lice that infest the bodies and feathers of fowls, there are more than a score of different species of them. While these varieties differ in size and shape, their manner of reproduction and the measures necessary for extermination are practically the same in all cases.

One of the simplest ways of keeping down body lice is by means of the dust bath. If the fowls are provided with a few dusty spots where they can wallow and fluff themselves, they will smother many vermin as well as exercise their bodies. Some people sprinkle a little disinfectant or louse powder into the dust bath to help kill the lice. If great droves of them are present, however, a quicker and more effective way of fighting them is necessary. The fumes from some of the best commercial liquid lice-killers, when applied to roosts and nests, will penetrate the fowl's feathers and kill the body lice. Aside fro mthis, louse powder may well be applied among the fowl's feathers, making sure that the kind used is a reputable brand, and fresh.

In dusting a fowl, hold it by the legs with head downward in an empty barrel or box to catch the surplus powder. Sift the powder in among the feathers, then thoroughly work it in with the fingers to get at the base of the feathers, where most of the pests hide. Special attention should be given to the fluffy feathers on the rear parts, under the vent, under the wings and thighs, and about the head and neck. Little chicks, bothered with head lice, should be greased about the head and throat with lard or sweet oil.

THE RATION FOR THE MOULTING HEN

Successful poultrymen are busily employed just now in starting their hens to moult, and with just a bit of judicious handling this can be easily accomplished. Everyone will agree that the early-hatched pullet and the year-old hen, (if the latter are moulted early) will furnish next winter's eggs.

It is not generally known that hens can be made to shed their feathers early and grow the new plumage weeks before it would ordinarily be accomplished otherwise. But actual experience will convince one of the truth of this. By beginning the moulting in July or early August, it gives the fowls ample time to pass through the moulting periol early and uniformly. To feed hens for early moulting the method consists in withholding part of the feed for about two weeks which stops the egg production and reduces the weight of the fowls, then feeding heavily on a ration suitable for the formation of the feathers and the general upbuilding of the system.

A nitrogenous ration with an abundance of animal feed will be found highly beneficial. Linseed meal and sunflower seed both aid very materially in the production of a new coat of feathers. Pure water and sanitary quarters are necessary at all times, but are most imperative during the moulting period. Nature demands a season of rest for all creatures, and when fowls shed their feathers and put on the new plumage, is rightfully their vacation time. Eggs and new feathers do not grow at the same time.

To assist nature a bit is a paying venture. Hens run low in vitality after the strenuous laying spring and summer, and to bring about the earlier moulting puts them in prime condition weeks before the cold weather. Oftentimes hens keep right on laying until late in the fall, and when the cool nights in autumn come, they shiver with cold. The loss from this source can beduced to a minimum by forestalling with early moulting. Feed less meat and bone scraps and more grain and dry mash, and to the latter add some good reliable poultry tonic.

Now when feed experts predict a shortage of foodstuffs, and everyone is urged to do their "bit" in order to avoid famine, every new method that has proved practical should be given a tryout. To produce winter eggs, of which there is usually a shortage, early moulting is imperative.

NEW POULTRY DISEASE

At present when growing chicks are attaining an age of from ten weeks to three months, a disease affecting the liver and bowels is causing considerable losses. This disorder, according to Dr. Wickware of the Experimental Farm, is quite prevalent throughout Canada and is probably responsible for many deaths at present attributed to white diarrhoea. The disease is caused by a small egg-shaped germ which produces inflammation of the bowels and liver. The liver may show changes varying from a fairly normal appearance to large areas of a yellow color when cut into show a cheese-like centre.

The chicks affected appear dull and isolate themselves, usually remaining in the hover or under the hen. The feathers become ruffled, wings droop, appetite is lost and occasionally the chicks will give utterance to a shrill cry, particularly when trying to pass material from the bowels. A white discharge is usually present although it may be rather reddish in color and vent may become pasted with the material discharged. These are the prominent symptoms in typical cases, but chicks may also be badly affected and exhibit no outward appearance of disease until death suddenly takes place.

Treatment consists in dissolving 15 grains of powdered Catechu in a gallon of drinking water. This should be kept constantly in front of the chicks and should be changed every two days.

Prevention consists in the isolation of all ailing chicks and the thorough disinfection of quarters and runs. This may be accomplished by the application of a lime-wash solution made by adding two and one-half pounds of stone lime to a pail of water, to which is also added one-half teacupful of a good commercial disinfectant. This should be applied full strength with a spray pump, brush or old broom to all parts of the quarters, brooder houses, etc. The feeding troughs should be cleansed daily by scalding with boiling water, and special care taken to prevent the chicks from getting their feet in the feeding utensils or drinking fountains as the disease is transmitted from bird to bird in this way. The floor of the brooder houses should be covered with a coating composed of nine parts of sand and one part of air-slaked lime, and if the droppings are not removed daily, they should at least be mixed with a fair amount of air-slaked lime to insure proper disinfection. If the runs are not too large it is also advisabl to cover them with a thin coating of the lime and either spade or plow them up. The chicks should be kept away from all adult fowls and carcasses of dead birds immediately burned as burying only serves to keep the infection going from year to year.

THE HEN'S MOULTING PERIOD SHOWS HER UTILITY

Each year the hen goes through a physiological process known as moulting, in which the fowl sheds the old feathers and replaces them with new. This is a very serious drain on the vitality of the laying hen. Usually they cease laying entirely during the months of October, November and December. Where the late fall and early winter usually furnish cold weather, it is a period of extreme hardship for farm poultry unless they are properly taken care of. The New York State College of Agriculture has made some interesting findings regarding the moulting period of fowls. This may be summarized as follows:

1. The hen feathers more quickly in those areas which protect the vital parts.
2. From the incubator to the laying period, chicks experience at least four moultings, either partially or completely.
3. Hens frequently lay during the summer while partially moulting but seldom during the general moulting.
4. Young hens moult more quickly than older ones.
5. Hens moulting very late moult in less time than those moulting earlier.
6. Hens moulting very late give a higher yearly production than those moulting earlier.
7. Hens lose in weight while moulting.
8. Broodinss appears to retard moulting.
9. Starving the hens appears to increase broodiness.
10. Hens moulting early resume production more quickly after moulting than those moulting later.
11. Hens moutling early lay more eggs during early winter than hens moulting late.
12. The most prolific hens moult the latest.

It is thus seen that hens which moult late are usually the heavy producers. There is a lesson in this for every poultry keeper. Take proper care of the hens that moult late because of the cold weather. Such hens make excellent breeders in the spring and should be properly cared for. Tbis can be done by putting them into the house early and not allowing them to suffer from the cold winds.

The shedding of feathers is a heavy drain on the constitution of the fowl because it is necessary to manufacture a new coat. The making of new feathers can be greatly aided by feeding highly protein or meat foods. The ordinary grains like wheat, corn and oats do not contain enough protein. Meat scraps from the house or commercial beef scraps are necessary if best results are to be obtained. If a fowl is thoroughly chilled and thereby weakened by late moulting during cold weather, she will find it difficult to recuperate until the late winter or early spring. By giving her extra care she can be started laying much earlier in the winter.

Green Food for Poultry

During the late fall and early spring the addition of green food to the rations of the hens will well repay the efforts of the poultry keeper. This can be furnished in many ways. Green cut alfalfa, corn fodder, lawn clippings or clover are excellent green foods. If these are not available, roots, such as mangles or turnips, are very acceptable. Many good poultry keepers feed both. This, of course, is in addition to the regular grain rations. By using a little thought during the growing season enough of this material can be secured in a dark room or some place where light is excluded for winter consumption.

TUBERCULOSIS IN POULTRY

Subscriber Innes, Sask., writes—"We found a hen dead, but had not noticed her sick. Upon examination, we found a great many small, white granular substances on the membrane, between the skin and the flesh. These varied in size from mere specks to larger than the head of pin. A great deal of blood had collected between the skin and the flesh, toward the lower and back part of the body on one side, also the part of the liver toward this side looked as if it were in a state of decomposition. Otherwise, everything seemed all right. About the same time we noticed a hen lame. She died in two or three days. We found similar granules on the membrane, and the liver was a very peculiar color, though not like the other. Now another hen is lame.

"Hens have free range and are fed wheat and a little oats. Have grit, shell and charcoal before them. Sometimes have noticed droppings of a bright, yellowish color and frothy nature, this especially when they have been fed butter-milk. If this is a contagious disease, would chicks hatched from eggs laid by this flock likely to be infected? Would eggs be fit for use?"

Answer by Prof. R. K. Baker, University of Saskatchewan: The small yellowish spots which you mention as being present between the skin and the flesh of the fowls, and also the yellowish, cheesey lumps usually found in the liver, are indications of tuberculosis. With this disease diarrhoea is a frequent symptom, the droppings usually being bright yellow, and more or less frothy. Lameness is also one of the later symptoms. It is possible that the immediate cause of death was the hemorrhage described above. Tuberculosis in fowls is a communicable disease, though in flocks where the vitality of the stock is good, few birds seem to contract it.

I would suggest that you provide plenty of ventilation in the poultry house. This may be best done by the use of large cotton covered windows. The house should be thoroughly disinfected with some strong germicide. All birds showing symptoms of tuberculosis should be removed from the flock, and, unless they make a complete recovery, after a couple of weeks' special care, it would be safer to kill them and burn their bodies. For your own satisfaction, however, you should in each case open the bird to see whether tuberculosis is present in the liver.

Eggs laid by these fowls would usually be free from infection, though the vitality of the chicks hatched might be low. This year's chicks should be kept on range at a considerable distance from the old poultry houses and mature stock. The ground around the present house should be plowed up and sprinkled with lime. If possible a new house should be built to house this year's birds during the winter.

It might also be well to dispose of all the old stock. If the present house were left idle for one season and were thoroughly disinfected it would possibly be safe to use it again next season.

WATCH FOR MITES

Chicken mites, the night pest of poultry, may not always leave the fowls before daylight, as commonly supposed, but may remain in the feathers in such numbers as to make poultry possible carriers of this pest to uninfeted places.

To prevent the introduction of this serious pest in mite-free flocks by means of new stock, specialists suggest these precautions: Ne wstock not known to be free of mites should be isolated the first few nights and allowed to roost on new roosts wrapped with pieces of folded paper. The object of using the paper is to furnish a convenient place for mites to hide. The paper should be examined, and if mites are found, the fowls should be kept on these roosts five or six days, or until no more mites come off the fowls. Removing and destroying the papers and treating the roosts thoroughly with kerosene or crude oil, will prevent an infestation.

One of the most effective sprays for houses and roosts is a so-called wood preserver, consisting of anthracene oil with zinc chlorido added; the cost of this spray is about $1 a gallon, but twice the quantity may be obtained by reducing with equal parts of kerosene.

Pure-bred stock is the only material with which the farmer can work in the certainty that he is improving the quality of his work. The heredity of countless generations of selected blood is too potent to be ignored.

Costs No More Than a "Span"—

It seems almost impossible, but it is true that you can get a handsome, comfortable, speedy 5-passenger Ford motor car for no more than it would cost you for a span of good driving horses, a carriage and harness.

The initial cost of a Ford car is so small that every progressive farmer can readily purchase one.

And who wouldn't rather motor to town, to church, to the railway station, to the neighbor's, than drive? — especially when it is three times as fast to motor, more comfortable and less expensive.

The low cost of running the Ford makes motoring possible for the masses, where it was formerly a rich man's luxury. It makes motoring a matter of good business, especially for those whose time is valuable. And with labor so scarce no one needs the time-saving Ford so much as the busy farmer!

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

A PRAYER

Somewhere across the infested sea,
Serving the cause of liberty,
Dear Lord, is my dear son.
I know not how he fares tonight,
But keep him ever in Thy sight,
For I have but the one!

Thou gavest two to bless my life,
But one fell early in the strife—
My first-begotten son!
He with his comrades marched away,
And then a message came one day—
Dear Lord, I have but one.

Then, while so sorrowed and bereft,
Though only he to me was left,
I could not say him nay,
Who urged that duty bade him go—
His country called, he said, and so
How could I bid him stay?

But, O dear Lord, 'tis hard to bear,
With not another child to share
The hearth when day is done!
I can but kneel to thee and pray:
Be with him through the hellish fray
And keep thou safe my son!

I know the cause is good and true—
I know that suffering must ensue
Before the fight is won.
Yet bear with me, O Lord, this night;
Be thou my solace in my plight
And guard my only son.

—Reuben Goldsmith.

LIVING ON AN ALLOWANCE OR WITHIN THE INCOME

One must have a standard, consciously defined and recognized in order to choose successfully. A standard of life consists of those principles which guide one's motives and direct one's activities. We have standards by which we descriminate in music, art, and many other things. But who can define the Standard of Life readily? We may reveal it to others, in fact we are constantly doing so as we decide this or that. The great difference between a successful person who accomplishes much and one who never seems to amount to anything in particular, is the difference in which their standards of life have been made clear and conscious, thus becoming a vital, guiding factor in action.

We recognize innumerable varieties of standards as the result of varying education and training, advantages and opportunity, or the lack of them. False standards arise from failure to descriminate between needs and wants. There are conflicting opinions as to what vital needs are, although it would seem self evident that they consist materially, in those things which man must have to live under the best conditions, such as pure food, healthful clothing, sanitary houses, and those things which will minister to his highest intellectual and spiritual development. Through failure to distinguish intelligently the majority of people spend two-thirds or more of their income for what fails to bring them the best results in health and happiness.

We are too inclined to scorn the woman of former days because of their more limited horizons. We may profitably study their understanding of their conditions and needs, and the wise adaption to them which gave them an important place in the progress of their time. The women who succeed today in the use of larger opportunities are those who, like them, dare to live in intelligent independence true to her individual standards of life. Such women do not indiscriminately copy the manners of living or dress of others merely to be ilke them or in fashion. They are not ashamed to acknowledge a liking for home-making and housekeeping. They spend with care and judgment. A suggestive comparison between the women of the past and those of the present is that of Miss Richardson in The Woman Who Spends: "In olden times women thought, and thought and thought before they spent, often making the spending a burden. Now women often spend and then think and think and think. Nor does the lack of thought beforehand ease the burden of the results of her spending.

No true economy can be practised in the home until a standard is adopted by all the members of the family, in which there is an agreement of effort to promote the family well being; at the same time that all unite to accept with intelligent grace the common deprivations necessary to lessen family waste either of money, labor, time, health, strength, or possessions.

Only by keeping an accurate record of expenditures can one follow the outgo so as to find how the standards of the family measure up to the ideal. Without indisputable facts in black and white, one is easily deceived. It is natural to feel that economy is being practised when many a coveted article is resisted. The years bill with its record of many other indulgences is sometimes a rude but wholesome awakening. Twenty five cents today and another to-morrow for some luxury in food seems too slight to take accunt of, but multiplied by three hundred and sixty five the increase in the food expense becomes a considerable sum.

In making a classification of one's expenditures, it will be most useful to decide upon an experimental division of the years income under the heads that seem most valuable to keep as separate divisions. The actual per cent of the income allowed for each division will depend chiefly upon two things; namely, the size of the income, and the ideals or standards of the family. The necessities of life must be provided and if the income is small, barely enough to cover these needs, there is little choice left but to spend all for them.

Following are a few examples by Engel of ideal cases of proper division of income, for a family of two adults and three children.

Life Fam. Income.	Food.	Rent, carfare.	Operating expenses.	Clothing.	Higher
$3000-4000	25%	20%	15%	15%	25%
$3000-2000	25%	20%	15%	20%	20%
$800-1000	30%	20%	10%	15%	25%
$500-800	45%	15%	10%	10%	20%
Under $500	60%	15%	5%	10%	10%

Enlightment through education in real values is needed by all alike that correct divisions may be made and lived up to, and that the division for higher life, most often cut to a discreditably low percent, may be recognized and properly provided for. The best guide at present is a patient, thoughtful study of the problem's of one's own house until as equitable and consistent division is attained as can be made, meanwhile praying for speedy release from a condition so unsystematic and chaotic as that of the present time, and resolutely setting one's face toward the ultimate solution of some, at least, of the difficulties through better adaption of household management to the demands of the age.

THE VIRTUE OF SELF CONTROL

Who are the people whom you most admire and with whom you feel the happiest and the most comfortable? Surely not those who at every small pretext lose control of themselves in ungovernable fits of temper, or whose feelings are so supersensitive that you are in mortal terror of wounding them. Yet how many, many people there are who belong to one type or the other. It is certainly a great affliction, for such people are seldom happy. They are usually in the depths of despondency, either over the fact that some one has wounded them, or that in a spell of temper they have been too hasty and said things they regret very much.

One of a child's greatest blessings is to possess a calm, quiet mother, a mother who has judgment in teaching the art of self-control. This is an impossibility for many of us, as we well realize. Often though, there is back of this temper and sensitiveness a physical cause, some bodily derangement, that acts on the mind, and makes one just that much more susceptible.

A Debt to Others

But don't you believe that we owe it to our husbands, our families, our children and to ourselves, to do all we can to cure or overcome this trouble. I have in mind a charming friend who has poor health, and no one knows her real condition better than she does herself, yet she does the rashest things, things that, if she ever stopped to think, she knows will completely use her up, and still she does them. Then she pays the penalty by being laid up several days, often paying the doctor more than it would have cost to hire the work done.

Her physical tiredness acts on her mind, so that all times she is oversensitive, loses all control of herself, saying things she regrets almost instantly, making all her friends almost afraid of her and spending almost a whole day bathed in tears. She is the kindest woman in the world, ready to overdo for friends. No one ever came to her for help, but that it was always forth coming. Yet she cannot seem to realize that other people are kindly disposed and not just waiting to hurt her, or impose on her at every opportunity.

Examine Ourselves

Nor is this an isolated case. There is probably no one of you who does not know at least one or more persons, who are similiarly afflicted. The woman who possesses a fair supply of self-control, rarely "looes her head" or makes a grevious mistake. Her opinion may differ from anothers and she may state her position clearly, yet she has sense enough to realize that some one else has a right to her ideas as well as she, and no trace of anger is ever visible. Such are people upon whose judgment you can rely. It is such a comfort to be able to say to a friend, "She is so sensible, so calm, nothing ever upsets her." And how we long to have this said of us. But longing never accomplished anything. We must STRIVE and strive hard and continually, before gaining and holding this enviable goal.

FARMER'S REVIEW.

ECONOMY IN LEATHER

Attention is called by the government to the need of care in the use of leather.

Leather is demanded in war time for soldiers' 'shoes, for harness, for equipment of many kinds. In this country there is no such surplus that we can afford to waste any of it; and it is wasting leather not to care for and preserve it properly. In the army and out, we all wear shoes. If we manage them rightly they will last longer; we shall not need so many new ones and there will be more left for others. The Leather and Paper Laboratory of the United States Department of Agriculture makes the following suggestions.

To save shoes, they should be oiled or greased whenever the leather gets hard or dry. They should be brushed thoroughly and then all the dirt and mud that remains washed off with warm water, the excess water being taken off with a dry cloth. While the shoes are still wet and warm apply the oil or grease with a swab of wool or flannel. It is best to have the oil or grease as warm as the hand can bear and it should be rubbed well into the leather, preferably with the palm. If necessary the oil can be applied to dry leather, but it penetrates better when the leather is wet. After treatment the shoes should be left to dry in a place that is warm—not hot.

Castor oil is satisfactory for shoes that are to be polished; for plainer

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GLOVES and OVERALLS
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A SAMPLE PAIR SENT TO YOUR DEALER ON REQUEST
The Best is none too good for the Farmer
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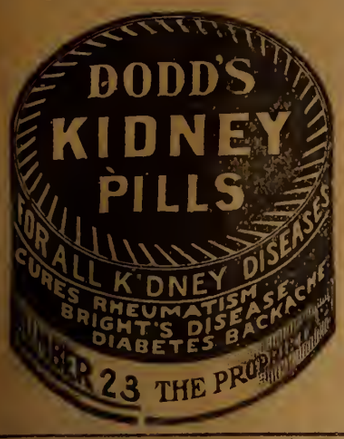

foot wear neat's foot, fish oil, or oleine may be substituted. If it is desired to make the shoes and boots more water proof, beef tallow may be added to any of these substances at the rate of half a pound of tallow to a pint of oil. The edge of the sole and the welt should be greased thoroughly. There is no danger of applying too much grease to these parts.

A simple method of making the soles more durable, pliable, and water resistant, is to swab them occasionally with linseed oil, setting them aside to dry over night.

Many of the common shoe polishes are harmful to leather. All those which contain sulphuric, hydrochloric, or oxalic acids, turpentine, benzine, or other volatile solvents have a tendency to harden the leather and make it more liable to crack.

It is poor economy, too, to wear a shoe with the heel badly worn on one side. This throws the shoe out of shape and may soon result in its ruin. It is also likely to cause temporary injury to the foot.

We would add to these suggestions that the department that a further way to economize in the use of leather is to refrain entirely from buying the very high shoes, whose use has increased enormously the amount of material used; to wear low shoes as far as possible; to buy shoes of canvas or other material rather than leather; to use leather substitutes, some of which are very satisfactory, for new soles.

Do not increase the shortage by laying in a stock of shoes against possible emergencies.

"I HAVEN'T TIME"

I have no time to tell my children stories, I have not time to walk out of doors with the youngsters, I have no time to teach my girls at home. All these are commonly heard remarks from women whose occupations take their every available moment. Is there not some task these women can leave undone so they can make time to bring up their children? The men and women who have left their mark on this world have generally been those who have been brought up in a home where the parents had time for them.

The endless "why" and "wherefore" of children are the keys with which they find tongues in trees and books in running brooks. If children are snubbed and "shut-up" for six, eight or ten years is it a wonder teachers find it hard to get them to open up their minds to their efforts?

It is easier to send the boy or girl off to the library for a story than to tell it yourself, but a well told story can train senses to be accurate, eyes to be observant and tongues to be polite. It does take time to teach girls at home but what a serious waste of time to send your girl to be taught in a far away school when you overwork yourself for lack of her wasted strength

In a certain home, once upon a time, a great blank book was kept on a low table and to it was tied an always sharp pencil. Every evening someone wrote down some happening of the day, for it was the family's home journal. Sometimes father and mother would write an entire page together. Again Tom would scrawl a single line and on some happy days each one of the family would bend for a moment or two over the pages making a record in the book and in their own lives.

Years after many a hearty laugh rang out as the old note book was read and the heart throbs of childhood came again in visible shape. That was a practicable way of uniting the family.

No day nor hour that is great enough to claim the children's attention should be deemed too trivial for your interest. Some parents bring up their children by hard and fast rules, like platoons of soldiers. You must eat this or that, they etll them, because it is good for children. You must work, talk, play and dress along the same rules year after year, Sunday and Christmas are the only holidays in the calendar for them.

A recruiting officer told me that five soldiers out of every ten men enlisting had to look at a note book to be sure they had the day of their birth correct. Would this have been the case if their mothers had been among those who had time for son's birthday dinner?

DOMESTIC COURTESY

If a man must have his spells of crossness and unkindness, it were better if he gave vent to his feelings when dealing with strangers, and not at home with his family. Few have done more for the man than his wife and children and they deserve his very best treatment and kindest words. But is it really necessary to pass through these "spells?" A few efforts at laughing off diappointments and trials will have a tendency to sweeten life and fit a man for being kind to everyone. Even the stranger deserves better than you may give him, for who knows but what he may later wish to become your friend. No man has ever felt better after giving way to bitter feelings and cross words but everyone has felt pleased after he has been guitly (?) of doing some kind deed and giving out kind words. Love and kindness are two of the most need characteristics in mankind.

NUT BREAD

Four cups sifted flour, four even teaspoonfuls of baking powder, one teaspoonful salt, one cup of chopped English walnuts, two eggs well beaten, one-half cup sugar, two cups milk. Let it rise by standing in pans for 20 minutes before baking. Bake 30 to 35 minutes. This makes two loaves.

To Prevent Chapped Skin

—use warm water and Baby's Own Soap.

The warm water opens the pores of the skin and the minute particles of pure refined vegetable oils which form the creamy, fragrant lather of Baby's Own Soap are absorbed into the skin, keeping it soft, healthy, and preventing cracks and chaps.

A perfect rinsing, then smart rubbing when drying guarantees a fine smooth skin in any weather.

BABY'S OWN SOAP

Best for Baby Best for You

Canada's Standard toilet and nursery soap for over 30 years.

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"No more Dyspepsia for Us!"

There isn't a member of the family need suffer from indigestion, sick headaches, biliousness, fermented stomach, etc., if he or she will take Chamberlain's Tablets. They cleanse the stomach and bowels and stimulate the liver to healthy activity and tone up the whole system. Take one at night and you're RIGHT in the morning.

All druggists, 25c, or by mail from Chamberlain Medicine Company, Toronto. 45

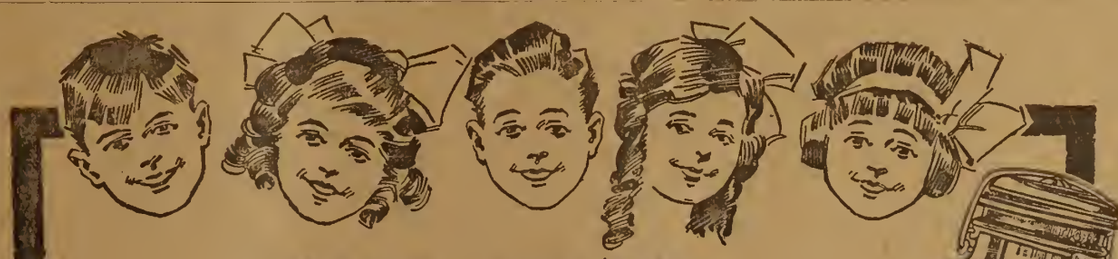
CHAMBERLAIN'S TABLETS

LAYING A RUG

There is as much art in placing a rug as in hanging a picture; if you lay a rug with its irregular lines and figures all converging from the centre obliquely across the floor, the result is a bewildering zig-zag effect; but place it square with the lines of the wall and the difference will be quite evident.

WASHING BABY'S STOCKINGS

After washing in the ordinary way, lay the stockings out flat and, beginning at the toe, roll them, stretching them crosswise. Wring them as dry as you can in this way, then unroll them and hang them to dry. If treated in this way, they will not shrink and the feet will be large enough.



CROWN BRAND CORN SYRUP

Children prefer it to the most expensive butter. Why not save money by using more of this syrup ?

In 2, 5, 10 and 20 pound tins—3 lb. Glass Jars.

Write for free Cook Book. 34

THE CANADA STARCH CO. LIMITED, - MONTREAL.

HOW TO PROLONG LIFE OF SHOES

The following suggestions relative to buying and caring for shoes will, if fololwed, assist in getting the most wear from them:—

(1) Carefully fitted shoes wear longer than poorly fitted ones.

(2) Substantial heels do not wear off nor run over as easily as fancy heels. They are in good style and better for health.

(3) Patent leather shoes are not economical; their wearing quality is a lottery, and they are uncomfortable for hot weather; they are heat producing and unhygienic because they are non-porous.

(4) Plain, light weight, balck kid shoes are the most economical for dress wear. They are always in good taste, look well with any costume and wear well. The same requisites in low shoes hold true, especially when one pair must answer for many occasions.

(5) At the present time the price of the low shoe is practically the same ever, a better grade stocking is required and more of them, as the wear on them is harder, therefore the purchase of low shoes for street wear is questionable economy.

(6) While the supply of leather is limited why not create a demand for cloth tops which wear well and look well. Canvas shoes, too, have their place, require comparatively little leather and should be cheaper.

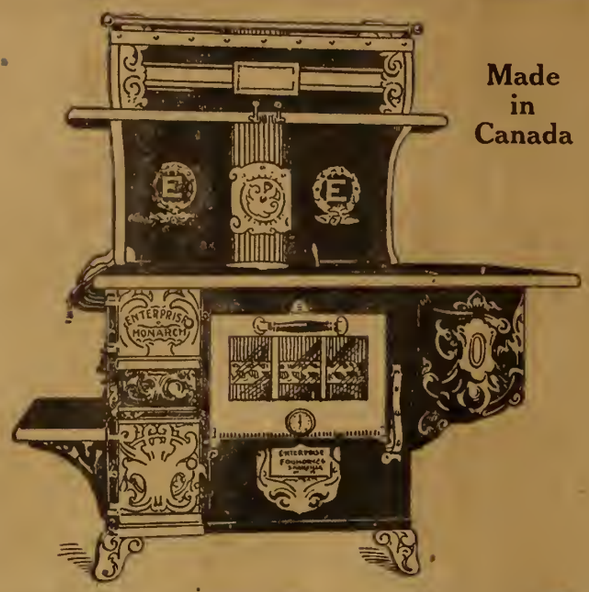
(7) Shoes wear longer when two pairs are alternated. Shoe trees help to preserve the shape when not in use.

(8) Keep the heels in good repair, otherwise the whole shoe soon loses shape. Have shoes resold as soon as needed.

(9) Wear rubbers in wet weather. This prevents the dampness from rotting the threads and the soles from separating.

(10) Keep shoes clean. Invest in a good polish and a brush and care for your own shoes unless your time is very valuable.

(11) Insist on your merchant supplying you with plain, neat, sensible styles. Do not buy the duddy types, because in the first place you pay all the way from 25 to 100 per cent. more for this class of goods. The manufacturer must protect himself against loss or left over, out of style stock, etc., and in the second place the life of a fancy shoe is shorter, the adaptability less and the upkeep and care very much more expensive in both time and money.



Made in Canada

ENTERPRISE Steel Monarch Range

MADE of finest steel plate, asbestos-lined, with every practical time-and-labour-saving improvement yet invented, the Monarch is truly a "king among ranges". Strong, handsome, durable, economical of fuel, it will give perfect satisfaction for many years of daily use. For coal or wood.

Write for booklet— free for the asking.

Enterprise FOUNDRY CO. SACKVILLE, N.B.

HELPFUL HINTS

Washing in cold water when overheated is a frequent cause of pimples.

It is said a wart can be removed by touching it several times a day with castor oil.

Cover raisins with water when stoning them. This prevents stickiness, and cleanses the raisins.

It is good economy to take time to keep the hands in good condition. Use small mops. brushes and paddles for every possible kind of work.

Cut the old table linen into small pieces and keep it in some handy place in the kitchen to use in greasing cake and bread pans, then burn. This saves time and greasy fingers.

Lemon juice is good to remove stains, and pumice stone for scouring grime off the hands. It is always the part of wisdom to take the very best care of these, our bodies.

People troubled with chronic sick headache will be glad to know that sleep, if taken at the psychological moment, will prevent the attack. If the subject of sick headaches will watch the symptoms they will note that it begins with a feeling of weariness and heaviness. This is the time to sleep an hour, or even two, and it will eventually prevent the headache. When the attack is fairly under way, sleep will not prevent it.

SHORT CUTS IN HOUSEKEEPING

Clean aluminum ware with a cloth dipped in lemon juice.

The only hopeless sorrow is the one that shuts itself up in self.

Discolorations on teacups disappear under vinegar and salt treatment.

Frankness may or may not be a virtue. Much depends on the spirit back of it.

If you want to cool a dish of food quickly, set it in a pan of cold salt water.

The worst thing about an excuse is that we deceive ourselves when we make it.

Remember that entire failure is not possible when one honestly tries to do her best.

Tell your friend at the seashore to bring you a round, hard clam shell for a pot scraper.

Fruit gathered just after a rain jells more slowly than that gathered on a bright, dry day.

It is often quite a consolation to remember that those who work for money alone get only what they work for.

It pays to keep the kitchen cupboards and drawers neat day by day. They should never need a thorough cleaning out.

Has the fire gotten down to coals and you want a pressing iron quickly? Set a stove lid on the coals and the iron on that.

The method of putting up cabbage by fermentation has a number of advantages over the present process of making sauerkraut.

Each day put a fresh slice of bread (removing the stale one) in the cake box. The bread will dry and the cake remain fresh.

An empty lard pail of the right size, turned upside down on the closet shelf, makes a good hat rack, keeping both crown and rim in shape.

To make buttonholes on lace put tiny squares of lawn underneatth and work through it. When the buttonholes are finished cut the lawn away.

If filling is needed for couch or hammock pillows, cut cotton batting into small squares and fluff to twice their size by putting in a warm oven for half an hour. Be careful not to scorch.

If dried fruit has become wormy but is not hurt, put in kettle, cover with boiling water for a few minutes, then pour off water and dry fruit.

Before covering button moulds that are to be covered with wash material, boil them, then the coloring matter in them will not spoil your buttons by coming through when the garment is washed.

Never iron or press corduroy. If wrinkled turn wrong side out, dampen thoroughly and hang carefully to dry. If it has been washed, press water out but do not twist or wring, then hang on line or coat hanger to dry and shake a little to fluff the nap.

RENOVATING WINDOW SHADES

Three years ago our window shades seemed practically done, but before buying new ones I thought I would see what paint would do on them, as there was some dark green paint in a can in the granary. I mixed the paint fairly thin with turpentine, laid the blinds on the granary floor and daubed paint on all the thinnest spots, then gave each side two coats, letting them dry between times. I went over the lace on the bottom, too, and they were almost like new, and are still on the windows and good for years yet.—M M.

THE SIGNIFICANCE OF HOME MAKING

For most people the home is the beginning and the end of life. All their activities proceed from it and return nto it. Therefore, of all the arts those pertaining to home making are the most important, and of all the sciences those which find their application in the home, making us in telligent about the home and its needs are the most significant.

Home making is universal, that is there are workers of all classes and intelligences engaged in its occupation. But the woman who is the most successful in making a home is in every sense engaged in a learned pro-

HEART WAS BAD

WOULD WAKEN UP IN DISTRESS.

There is nothing that brings with it such fear of impending death as to wake up in the night with the heart pounding and thumping. This uncertain and irregular heart action causes the greatest distress of both mind and body.

Milburn's Heart and Nerve Pills strengthen and invigorate the heart, so that it beats strong and regular, and tone up the nervous system so that the cause of so much anxiety becomes a thing of the past.

Mr. Archie Beaumont, Edgett's Landing, N.B., writes:—"Have been bothered with my heart and nerves for about six years, caused by overwork and worry. My heart was so bad I would waken up several times during the night in great distress, and my heart thumping. About a year ago I took three boxes of Milburn's Heart and Nerve Pills, and they helped me a great deal."

Milburn's Heart and Nerve Pills are 50c. per box at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

A MESSAGE TO WOMEN!!

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:

Mrs. M. Summers, Box 309 Windsor, Ont.

PULVERIZED LIMESTONE

SWEETENS THE LAND AND PRODUCES HEAVY CROPS

The demand last season for our "Clairmont" Brand Pulverized Limestone was so heavy we were unable to fill a great many orders. We expect a very heavy business for 1918 and would advise all booking now and getting their supply early. Our Limestone is showing wonderful results.

—Manufactured by—

C. H. PETERS SONS, LTD., St. John, N.B.

Works at TORRYBURN, on C. G. R.

fession—the greatest one on earth. For she has to initiate, plan, direct and carry out operations which involve in greater or less degree all the sciences and arts known to man. She also deals with those subtle spiritual powers which make or mar his personal happiness and influence his soul's salvation.

Housekeeping should be ranked as a profession instead of a trade. One who works at a trade does an assignment planned by someone else who resumes the responsibility. A housekeeper is a director of home, she plans the work and looks after the spending of the money. This must be a business and requires qualifications. The woman who considers this work as an opportunity to assist in haring the responsibilities of the wage earner has grasped the truth concerning the possibilities of her work.

Unfortunate is the home where the practical experience all comes after marriage. It comes at the hardest of periods and is unjust to any man. In no business can failure be graver or the results more serious. The fact that some very efficient housekeepers have evolved from unpromising beginners is no argument; such are, without exception, most eager for their daughters to receive training, since they know, by dear experienc, its value. Our grandmothers, many of them, were beautiful housekeepers and splendid mothers, but they learned their lesson in the hard school of experience and with the price of much unnecessary suffering. The young women of today have no excuse for answering "not prepared" when life demands that she assume her place as homemaker. Can anyone feel that this important work should be undertaken at marriage by girls who rely for preparation upon chance occupation at home supplement by the much-abused "mother instinct?" There should be no more question as to the need of education and training for the woman who selects the food, clothing, and works of art which minister to the highest welfare of a family, than there is for the need of study on the part of the farmer, manufacturer, or the artist.

Much of the present aversion to household duties would vanish before adequate preparation to perform them. It is very true that when one's knowledge of a subject has passed the stage of drudgery and become a science its performance immediately becomes a pleasure. The essential thing for all to learn is to love their work, to see its possibilities as well as its difficulties, and to make their work their servant, instead of their master. This can be done by the homemaker as well as by the physician.

FIRST AIDS IN THE FARM HOME

A farmer cannot make a trip to the druggist every day, therefore it is essential that in the farm home the medicine chest should be wel lstocked. Before the last of anything is used a new supply should be purchased. In case of serious illness or accident, a doctor should of course be called, yet very often it is almost impossible to get a doctor and often for those living far from a city it takes some little time for a doctor to arrive.

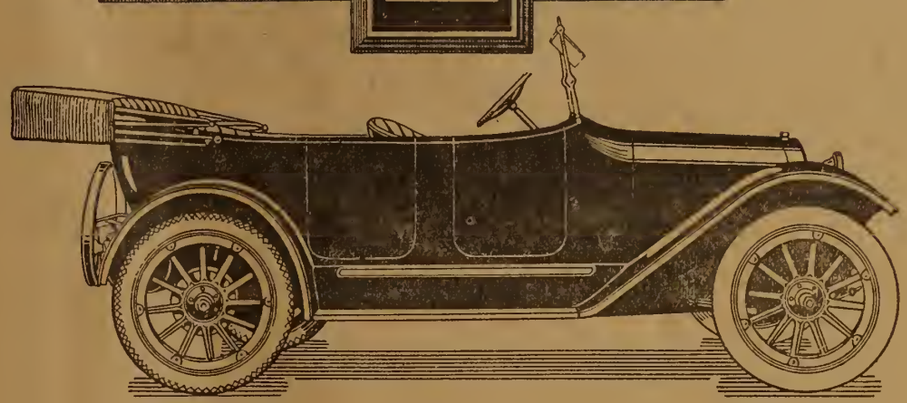
To remain calm in the face of the unusual or the unexpected is a test of character, yet in case of an accident it is most important that we remain calm. We will do harm if we do not keep our nerves steady. A mother once jerked a crochet hook which had caught in the flesh of a child's mouth. The flesh was torn and bled profusely. It might have resulted seriously had it become infected. The child (unknown to the mother) had got down some crocheting and began playing with the hook. Child-like she had put it in her mouth. When it became fast in her gum she ran crying to her mother. The idea that came to the mother was that the hook must be removed at once. Had she wiggled it around carefully and pushed the other way just a little, it might have come out easily. Instead she became alarmed. The first thought that occurred to her was to jerk it out and jerk she did.

If we were to write out a list of remedies and place it where we knew we could find it quickly we might do much toward making the sufferer more comfortable. In case of burns, soda, vaseline or lard is good. Never attempt to tear clothing from burned flesh, but rather cut around it and then bathe. We can do little at home to help broken bones but we can get the sufferer into a comfortable position to await the doctor's visit. For sprains a comfortable position and quiet is essential. The application of very hot cloths will help reduce the pain. For bruises apply either arnica or witch-hazel. In cases of poison a list of antidotes will be found in a physiology. Wine of ipecac is good to produce vomiting. Greatest care should be taken to keep bottles containing poison away from children. When a foreign particle lodges in the eye tears will often wash it out. Some are quite skillful in laying the eyelid back and with the aid of a match of toothpick removing the speck. In case of fainting the person can be revived by sprinkling the face and neck with cold water. Wounds demand the greatest of care for they may become very serious. **Apply iodine and keep** the patient quiet. Wounds which break the skin may result in blood poisoning unless care is taken to keep them from becoming infected. Nothing should touch the wound excepting that which has been sterilized.

The following fourteen articles are necessary in the home medicine chest: Absorbent cotton, adhesive plaster, ammonia, arnica, bandages, castor oil, gauze, iodine, listerine, mustard, turpentine, vaseline, wine of ipecac. witch-hazel and peroxide.

ANNOUNCING A NEW

CHEVROLET



MODEL "F-A"

"Baby Grand" Touring Car

THE demand for Chevrolet performance in a larger and more powerful car is met by the Baby Grand Touring Car.

Chevrolet engineers have, in this car, perfected many new features that give it a quick get-away, surplus power on hills, and reliability under all road conditions.

On account of its power, flexibility, comfort and easy clutch, this model appeals to lady drivers. The car is extremely well finished, nicely appointed and fully equipped.

EXCLUSIVE FEATURES

37 H.P. 4 cylinder valve-in-head motor, extremely powerful, smooth, flexible and efficient.

Cooling—Water circulated by centrifugal pump through large honeycomb radiator.

Clutch—Cone type, extremely easy to operate.

Brakes—Positive in action and easily operated.

Rear Springs—Semi-cantilever, making the "Baby Grand" one of the most comfortable riding cars.

Rear Axle—Three-quarter floating type with spiral driving gears:

Starting and Lighting—Electric Auto Lite.

Ignition—Remy.

SEND FOR DESCRIPTION AND PRICE TO

CHEVROLET MOTOR COMPANY OF CANADA LIMITED

OSHAWA, ONTARIO

DEALERS EVERYWHERE

CAUGHT COLD NEGLECTED IT

WAS SICK FOR MONTHS.

You should never neglect a cold, however slight. If you do not treat it in time it will, in all possibility, develop into bronchitis, pneumonia, asthma, or some other serious throat or lung trouble.

On the first sign of a cold or cough it is advisable to cure it at once, and not let it run on for an indefinite period.

For this purpose there is nothing to equal Dr. Wood's Norway Pine Syrup, a remedy that has been universally used by thousands for over twenty-five years.

You do not experiment when you buy it.

Mrs. W. G. Paquet, Smith's Falls, Ont., writes:—"I was troubled with lagrippe. I caught cold, and neglected it, and was sick for several months. I took three bottles of Dr. Wood's Norway Pine Syrup, and before I finished the last one I was entirely cured. I would not have any other cough medicine in the house.

It also cured my baby, who was very sick with bronchitis. She had the doctor three times, and he recommended 'Dr. Wood's.' I highly recommend it to those who need a quick cure."

See that you get Dr. Wood's Norway Pine Syrup when you ask for it. Do not accept a substitute. It is put up in a yellow wrapper; three pine trees the trade mark; price 25c. and 50c.; manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

MINARD'S "KING OF PAIN" LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

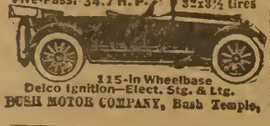
I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

Driver Agents Wanted

Drive and demonstrate the Bush Car. Pay for it out of your commissions on sales. My agents are making money. Shipments are prompt.



Bush Cars guaranteed or money back. 1918 models ready. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 10HT

115-in Wheelbase
Delco Ignition—Elect. Stg. & Ltg.
BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

Butter Parchment at Farmer Office

COLORING COTTON WITH COPPERAS

Editress Household Dept.:

Will you please publish a recipe for coloring cotton with the old-fashioned copperas color, also tell how to color tan with tanbark? What shall I use to set the color?

Carleton Co. SUBSCRIBER.

Ans.—Subscriber's enquiry with regard to old-fashioned dyeing is opportune at this time of shortage in commercial dyestuffs.

To color cotton copperas, dissolve one-half pound of copperas in a pail of hot water, in an iron kettle, as copperas is the sulphate of iron. Also have a pail full of white lye prepared. First dip the rags in the lye, then hang them up to dry, then dip in the copperas water, drying each time after dipping until the desired color is obtained. This lye is made from good hardwood ashes and is used to set the color. To color tan with tanbark (we presume the tanbark to be oak or white birch) fill a five-pail brass kettle with small pieces of oak or birch, let steep twenty-four hours and not boil, then skim out the bark, wet the cloth in soapsuds, then put it in the dye, stir well and air often; when dark enough dry, then wash in suds. It will not fade. A piece of copperas as large as a hazelnut or chestnut according to shade desired will give a stone color.

In coloring keep watching and moving the goods till the desired shade is obtained. If left folded or packed it will be spotted, whether the fabric be cotton or wool. In dyeing cotton or mixed goods the cloth should be allwed to become cold in the dye bath. Dyes set very slowly in these fabrics, so the cooling process is necessary to success. Woollens absorb the dye quickly and may be removed while hot when the shade desired has been obtained. Woollen goods should never be allowed to boil fast. Linen requires long and fast boiling. Never wring dyed articles too firmyl and always dry in the shade. The dfeing process goes on until the article is dry. Consequently any portion exposed to the sun will dry too quickly and the result will be a streaky garment. All goods must be thoroughly clean, well rinsed and damp when put into the dye. The action of metals affects the color.

SOME ESSENTIALS TO THE SICK ROOM

Even in this day when trained nurses are plentiful, the mother or sister must often be the "ministering angel," in times of sickness. Even the woman who seems to be naturally skilled in "comfort art" will value a few hints.

Make the sick-room attractive.

Give the invalid the best room in the house, and one as far removed as possible from the noise of the household machinery.

If possible, put the invalid in a room the walls of which are covered with plain paper, for a nervous patient is often driven almost frantic counting the roses or patterns on the wall.

Keep the room well ventilated and tidy. Never dust with a feather since that merely agitates the dust to the annoyance and danger of the patient.

Avoid disagreeable topics of conversation. Tell no depressing news in hearing of the patient.

The first requisite of a sick-room is a good bed. Cover the mattress with a thin, soft covering. Make the bed carefully, draw the undersheet tightly, smooth at the sides and pin down the corners with safety pins. This will prevent the sheet wrinkling. Never place the bed so the light will fall in the eyes of the invalid. Have a number of small pillows to tuck under the knees. For temporary use cover the pillows with cheesecloth.

Before serving food, bathe the invalid's hands and face and freshen the air in the room.

Never argue with the invalid but be patient and fism.

Grapes

green or ripe, in jelly, spiced conserves, or simply preserved in light syrup, make a delicious and inexpensive addition to your winter supplies.

Lantic Sugar

"Pure and Uncolored"

is the ideal sugar for all preserving, because of its FINE Granulation.

10, 20 and 100-pound Sacks
2 and 5-pound Cartons

Three new Cook Books sent free for Red Ball Trade-mark

ATLANTIC SUGAR REFINERIES
Limited, Montreal

133

TO PROTECT FINGERS

Here is a little device which you can make at home by which the tiniest tack can be held without possibility of injury to the fingers. Take a strip of tin about three-quarters of an inch wide, and about six or seven inches long. Shape it with a small slot in one end. Then double it, bending at the middle. When ready to insert the nail, put it into the slot, which will hold it by its head. This gives a kind of handle by means of which you can hold the nail perfectly upright while you hit it with the hammer. Of course the holder must be pulled away before the nail or tack has gone all the way into the wood. If you have not the tin at hand strong cardboard will serve the purpose. Try this little device just once, and I am sure you will feel amply repaid for your trouble in making it, as it will prevent many a bruised finger.

WHITE SPOTS ON VARNISH

If white spots come on the varnish from hot foods or drinks or from acids, there are two or three methods of removing the stains. One is to hold a hot flatiron near them. This takes out the white mark, but impairs the varnish, which must be renewed or the spot rubbed down with oil. Another plan is to rub the spot first with wood-alcohol and then with a piece of flannel moistened in camphorated oil. Turpentine and linseed-oil, mixed in equal parts, also make a good polish for white spots on furniture.

RE POLISHING TABLE TOPS

If your table top is badly injured so that it has to be done over, have it rubbed down with sandpaper in the hands of some one who understands the work and then use polish on it. Patience will be required, for at first the table will not look well. It will take some weeks of faithful rubbing with a good polish of wax to make the top presentable, but then there will be a surface which will last and which will not show white spots, no matter how hot the dishes placed upon it. Such dishes will, however, leave a ring where they have touched and for that reason the table should be adequately protected.

KEEPING THE HAIR IN CURL

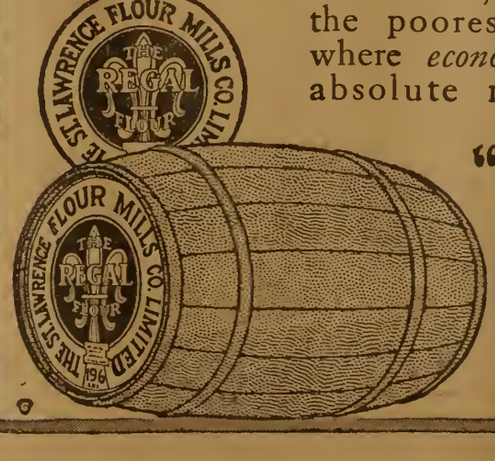
Here is the most successful curling preparation that she has ever used. In the warmest summer days it will keep the hair lovely and wavy three and four days with one application.

Buy from the druggist one-half ounce of quince seeds. Put in bowl about 10 seeds and two ounces of hot water. This will thicken in a few hours, then you can drain off the seeds and add a toilet water if you wish. Dampen the hair with this and do it up on hair curlers until dry.

The daily use of the curling iron will often cause the hair to become harsh and broken. This is caused by the heat taking away the natural oil. See that the iron is only moderately hot or abandon its use altogether.

Even a cheery disposition must use judgment. There's some hope for the fellow who grieves over his mistakes, but none for the grinning fool.

In the finest households in the land where *baking* results alone are *the* thing that counts, and also in the poorest families where *economy* is an absolute necessity,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1916

"REGAL" FLOUR

Stands First

THE COUNTRY WOMAN AND DOMESTIC SKILL

The value of wholesome cooking can never be over-emphasized. There is nothing to enthuse one where poorly coked food, unattractively served up, greets the family or the visitor in a country dining room. Aboe all persons the country woman should excel in the art of domestic and table economy. Here are a few hints for the busy wife:

FLANK STEAK BRAISED WITH VEGETABLES

Score a flank steak, dredge with flour, sprinkle with dots of dripping, salt and pepper, and place in a roasting pan. Over this place a layer of sliced onions, salt and pepper again, and a layer of sliced potatoes. Put some sliced carrots or diced turnip in the pan and around the meat, add two cupfuls of water or soap stock, cover closely and and cook in hte open for two and a half or three hours. Half an hour before the meat is done remove the cover to let the potatoes brown.

In serving, carefully lift the steak to a hot platter, preserving the contour of the layers of vegetables. Garnish with the carrots and turnips. Slice down through the layers.

BEEF WITH LIMA BEANS

To make a small quantity of beef go a long way for a hungry family, it may be combined with lima beans. (This isn't on a par with the practise of diluting with water as the beans are richer in proteid than the meat.) Soak a pint of dried lima beans over night, drain and simmer till the skin bursts. Cut a pound of chuck beef into inch cubes, brown together with a sliced onion in two tablespoons of beef dripping. Place in alternate layers, with beans in a casserole or covered baking dish. Sprinkle each layer with salt and pepper, a tablespoon of sugar, and a little mace. Barely cover with boiling water or use two cups of stewed tomato for part of the liquid. Cover and cook for three hours replenishing the water if necessary to keep the beans moist but not too liquid.

PORK AND VEGETABLE PIE

Cut a quarter of a pound of salt pork in small pieces and put a layer in the bottom of a baking dish. Slice about four cups of raw potatoes, one cup of turnip, and two small onions. Place in alternate layers with the pork and simmer on top of the stove till the vegetables are tender. Season with pepper and salt if necessary, drain off the liquid and thicken with flour. Pour this back over the vegetables, cover with a pastry crust and bake in the oven.

POTATO AND ONION OMELET

Prepare a quart of mashed potato, seasoning it with three tablespoonfuls of bacon fat, a little pepper and half a cupful of hot milk. Add two cupfuls of boiled onions, chopped fine, and beat until light, then spread smoothly in a frying-pan containing two tablespoonfuls of melted bacon fat, and cook until well browned. Fold and turn on a hot platter.

PLAYTIME DRESSES FOR THE CHILDREN

Children should be sensibly clothed for play, for there are few of them who enjoy being dressed up unless on special occasions. And it is positively cruel to punish youngsters for soiling their clothes when turned loose to have a good time.

There is trouble ahead for the mother who expects to dress even one small child daintily in white from top to toe and get it through in an hour's time without a smooch somewhere unless compelled to sit meekly in a chair. Far better to accept results as they come than be constantly nagging about its clothes. White stockings, just now so popular for little folks, look nice, but as to keeping them clean; there's the rub. And what preserve of pepaexe aq uno pnoo their immaculate condition for any length of time beyond when the impulse comes to get down on its knees somewhere where there is sure to be dirt.

Sensible parents are now making full gathered bloomers like the dresses for girls and doing away with white drawers entirely for everyday wear. This also makes the petticoat unnecessary. Nightics are made of crinkled crepe for the summer, either white or figured. Pink and blue in solid colors are also pretty for this use. Many grownups use them too. They wash easily and require no ironing if carefully hung up by the hem to dry. Where there are two or three children to povide for, white makes a lot of work for someone to do.

In the average home everything falls to mother's hands in making and laundering. It more sensible in such cases to draw the line at white hose except for special occasions and be content with black or tan. A pretty gingham or chambray should likewise be substituted for the white dress.

"It is just a little bit o' brass," laughed a Saint Louis girl who keeps house, "but it is a useful little bit. I use it to scrape my dishes before cooking dishes, pot and pans and such I wash them and particularly my things. It can be kept clean so much more easily than one of those wire things or any other arrangement that I have had. It is just a plain, smooth, oblong piece of brass with a small hole in it, and it has smooth edges too. There is nothing to catch or hold any dirt. It does not cut like a knife nor scratch, but removes just what it is supposed to remove and leaves the rest. Moreover, it is not only useful, but decorative too, hanging there over the sink by the window, where the sunshine makes it look like a square of gold."

More Money for the Farmer

WHEN live stock is tormented by vermin, lice, mites or flies, it cannot be profitable. You can prevent this annoyance and have more profitable stock by using Creonoid. Think this over. It means money for you.

CREONOID

Lice Destroyer and Cow Spray

Creonold stands alone as a lice killer and cattle spray. Economical too, because it is so strong that a little goes very far. Give your horses and cattle a fine, long distance spraying, so that they get the vapor. It will make them clean and vermin free. Put some Creonoid in the hennery and piggery. The use of Creonoid means better stock, more eggs, more good porkers, more milk. Try some now.

Carritte-Paterson Mfg. Co., Limited
Halifax, N. S. St. John, N. B. Sydney, N. S.

THE CAPE BRETON ISLAND EXHIBITION

(Continued from page 39)

Pekin, Female Sr.—1, Harry F. Lewis; 2, Mrs. D. R. Nichclson.

Pekin, Female Jr.—1, Harry F. Lewis; 2, Mrs. D. R. Nicholson.

Indlan Runner, Male Sr., Male Jr., Female Sr. and Female Jr.—1 and 2, taken by Mrs. D. R. Nicholson.

Male, A. O. V., Jr.—1, J. W. McLennan.

Female, A. O. V., Jr.—1, J. W. McLennan.

DRESSED POULTRY

Pair Fat Fowls—1, E. J. Johnstone, Georges River.

Pair Fat Chickens—1, John W. Munn; 2, Chas. O. Moffatt; 3, W. J. Moffatt.

EGGS

Heaviest and best doz. White Eggs—1, Alex. Corbet, New Waterford; 2, Geo. McKeigan, Coxheath; 3, M. W. Ross & Son.

Heaviest and best doz. Brown Eggs—1, Harvey Andrews, Coxheath; 2, R. M. Jackson; 3, John McMullen, Georges River.

BUTTER AND CHEESE

Best Crock of Tub Butter, 15 lbs.—1, John McMullen, Georges River, 95; 2, Mrs. E. J. Johnson, Georges River, 93.5; 3, R. J. Grey, West Bay, 92.5; 4, Duncan McLennan, Upper Middle River, 92; 5, Mrs. C. A. Munn, Leitches Creek, 91.5.

Best Butter in print, not less than 5 lbs.—1, John McMullen, 94.5; 2, Mrs. E. J. Johnson, 92.5; 3, Mrs. C. A. Munn, 92; 4, Mrs. H. A. Moffatt, 91.5; 5, J. W. McLennan, 90.5.

Butter in granular form—1, Mrs. C. A. Munn; 2, J. W. McLennan; 3, Mrs. E. J. Johnstone.
2, Mrs. H. A. Moffatt; 3, W. J. Moffatt, North Sydney.

Exhibitor scoring highest number of points, Trophy—John McMullen, Georges River.

CHEESE

Best Dairy Cheese—1, R. J. Grey, West Bay.

GRAINS AND SEEDS

Wheat

White Spring—1, R. M. Jackson; 2, C. A. Munn; 3, A. J. McLeod, South Bar.

Red Spring—1, Wilson Gillls; 2, John McMullen; 3, Chas. O. Moffatt.

Barley

Two rowed—1, John McMullen.

Oats

White—1, Nelson Beaton; 2, R. M. Jackson; 3, Chas. Andrews.

Black—1, Nelson Beaton; 2, Chas. O. Moffatt.

Buckwheat

Silver Bull—1, John McMullen; 2, A. J. McLeod; 3, E. J. Johnstone.

Gravel—1, E. J. Johnstone.

Field Peas—1, W. B. McOdrum.

Beans, White—1, M. D. Curry.

Beans, Colored—1, R. M. Jackson; 2, M. D. Curry.

Hops—1, Mrs. C. Hill, Sydney; 2, R. J. Grey; 3, Wilson Rudderham, Pt. Edward.

Best Sheaf Wheat, Whlte—1, Chas. Andrews; 2, R. M. Jackson; 3, C. A. Munn.

Butter in fancy display, made at private dairy—1, Mrs. E. J. Johnston;

Best Sheaf Red Wheat—1, Chas. O. Moffatt; 2, Wilson Gillis; 3, John McMullen.

Best Sheaf Whlte Oats—1, Nelson Beaton; 2, John McMullen; 3, Charles Andrews.

Best Sheaf Barley—1, Chas. Andrews; 2, John McMullen; 3, M. D. Curry.

Best Sheaf Timothy—1, Chas. Andrews; 2, John McMullen.

Best Pole Beans in pod—1, E. J. Johnstone; 2, W. B. McOdrum; 3, Harry L. Lewis, Sydney River.

Best 12 stalks Fodder Corn—1, Harry L. Lewis.

Best Peck Timothy—1, Chas. Andrews.

FIELD ROOTS

Potatoes

Round White Type, Irish Cobbler, etc.—1, McNichon & McPherson, Sydney Forks; 2, Wilson Gillis, Georges River; 3, Chas. Andrews; 4, Harvey Andrews; 5, Nelson Beaton; 6, John P. Harvey; 7, J. W. McLennan.

Oval White, Green Mountain, Carmen, etc.—1, Sarah R. McKenzie, Coxheath; 2, Wilson Gillis; 3, Duncan McLennan; 4, Harvey Andrews; 5, Nelson Beaton.

Long White, Burbank, Empire State American Wonder—1, John P. Harvey; 2, Chas. Andrews; 3, Nelson Beaton.

Rose Type, Early Rose, Beauty of Hebron, etc.—1, John P. Harvey; 2, A. J. McLeod; 3, Harvey Andrews; 4, Duncan McLennan; 5, Chas. O. Moffatt; 6, W. J. Moffatt; 7, J. H. McLean; 8, Alex. Corbett; 9, M. W. Ross & Son.

Red Skinned variety, Clarks No. 1, Dakota Red, Garnet Chili, etc.—1, Nelson Beaton; 2, Chas. Andrews; 3, J. W. McLennan; 4, W. B. McOdrum, Mineral Rock; 5, Angus McIntyre.

Dark Skinned type, such as McIntyres, Black Kidney, etc.—1, M. W. Ross & Son; 2, John McMullen; 3, Chas. O. Moffatt; 4, W. B. McOdrum; 5, Chas. Andrews; 6, Angus McIntyre.

Best collection from any one farm—1. John McMullen; 2, Chas. Andrews; 3, W. B. McOdrum.

Largest collection Herbs—1, Murdoch A. McLeod, Loch Lomond West; 2, Mrs. Harriet Clarke, Coxheath; 3, A. Southby, Sydney.

Collection from any one farm, garden vegetables—1, Chas. Andrews; 2, John McMullen; 3, W. B. McOdrum.

LADIES WORK

Collection of Ladies Work, Domestic—1, Mrs. Julia LeCambere, Glace Bay, C. B.; 2, Mrs. M. L. Ingraham, Sydney; 3, Mrs. Chas. A. Robertson, North Sydney.

Embroldery Collection—1, Mrs. J. W. Allen, North Sydney; 2, Mrs. Yorke Barrington, Sydney Mines.

Best Specimen Fancy Work by lady over 70 years of age—1, Mrs. Chas. A. Robertson; 2, Mrs. Jane McGillivary, Eydney; 3, Mrs. Chas. A. Robertson.

Fruits Preserved for Table

Strawberries—1, Mrs. D. R. Nicholson, Coxheath; 2, Mrs. E. J. Jackson, Georges River; 3, Emma M. Clark, Coxheath.

Cherries—1, Mrs. Murdoch McLean, Jacksonville; 2, Mrs. Edwin Ingraham, Sydney; 3, Mrs. W. J. Moffatt, North Sydney.

Red Currants—1, Mrs. Murdoch McLean.

Black Currants—1, Mrs. Mary Beaton, Coxheath; 2, M. D. Curry, Grand Mira South; 3, Emma M. Clark.

Raspberries—1, Mrs. E. J. Jackson, Georges River; 2, M. D. Curry; 3, Mrs. Mary Beaton.

Gooseberries—1, Mrs. Mary Beaton; 2, Mrs. Everett McLean, Sydney; 3, Mrs. W. J. Moffatt.

Plums—1, Mrs. D. R. Nicholson; 2, Mrs. E. J. Johnson; 3, Mrs. Everett McLean.

Pears—1, Mrs. E. J. Johnstone; 2, Mrs. H. A. Moffatt; 3, Emma M. Clarke.

Crab-Apples—1, Mrs. D. R. Nicholson; 2, Mrs. W. J. Moffatt; 3, Mrs. Everett McLean.

Blackberries—1, Mrs. W. J. Moffatt.

Blueberries—1, Mrs. Everett McLean; 2, M. D. Curry; 3, Mrs. W. J. Moffatt.

Mince Meat—1, Mrs. W. J. Moffatt; 2, Mrs. H. A. Moffatt; 3, M. D. Curry.

Peach—1, Mrs. H. A. Moffatt.

Pumpkin—1, Mrs. W. J. Moffatt; 2, Mrs. Murdoch McLean; 3, Mrs. Everett McLean.

Strawberries, canned, 1 jar each—1, Mrs. E. J. Johnstone; 2, Mrs. D. R. Nicholson.

Black Currants—1, Sarah R. McKenzie, Coxheath; 2, Emma M. Clarke.

Raspberries, canned—1, Mrs. E. J. Johnstone; 2, Mrs. J. W. Allen, North Sydney; 3, Emma M. Clarke.

Plums, canned—1, Mrs. J. W. Allen; 2, Mrs. E. J. Johnstone; 3, Mrs. W. J. Moffatt.

Pears, canned—1, M. D. Curry; 2, Emma M. Clarke; 3, Mrs. E. J. Johnstone.

Cranberries, canned—1, Mrs. Everett McLean; 2, Mrs. H. A. Moffatt; 3, Mrs. W. J. Moffatt.

Blueberries, canned—1, Mrs. Fred Clarke, Sydney; 2, Sarah R. McKenzie; 3, Mrs. W. J. Moffatt.

Collection fruit, preserved or canned—1, Mrs. D. R. Nicholson; 2, Mrs. W. J. Moffatt.

Collection Fruit Jellies—1, Emma M. Clarke; 2, Mrs. D. R. Nicholson; 3, Mrs. W. J. Moffatt.

HONEY

Best display, Honey in Comb—1,

"Look for the Roll with the Paroid Label"

The Largest Manufacturers of Roofing, Wall Board and Roofing Felt in Canada.

Have your Roofs this Protection?

HEAD and shoulders above all other roofings stands Paroid, which not only defies the weather, but resists fire. That is real protection, and explains why the Canadian Government and the railways have used Paroid.

NEPONSET Paroid ROOFING

has been giving all round satisfaction for 19 years. The genuine Paroid makes farm buildings warmer in winter. But remember—there is only one genuine make of Paroid—Neponset Paroid, with the label as shown. It has the grey surface. We also make two finishes of Slate Surfaced Paroid—Red and Green, permanent colors.

Every roll carries a complete kit inside, and has our unconditional guarantee.

For your home, use Neponset Twin Shingles, surfaced with crushed slate, Red or Green; they give all the durability and protection of Paroid. Look for the Neponset dealer and get real satisfaction.

BIRD & SON, St. John, N. B.

Main Office: Hamilton, Ontario

Mills: Hamilton, Ont; Pont Rouge, P Que

Also Manufacturers of Neponset Wall Board 189

Mrs. E. J. Johnstone.
Best display Honey in Glass—1, Mrs. E. J. Johnstone.
Exhibit Bees Wax—1, Mrs. E. J. Johnstone.

FRUITS

Apples

Baldwin—1, C. A. Munn, Leitches Creek; 2, Lewis L. Smith, Blackstone, C. B., 3, M. D. Curry, Grand Mira South.
King of Tompkins Red—1, E. J. Johnstone; 2, Lewis L. Smith.
Bishop Pippin—1, C. A. Munn; 2, Donald McL. McDonald, Glendyre; 3, M. D. Curry.
Northern Spy—1, Hector McKenzie, Blacketts Lake; 2, C. M. Meloney, North Sydney.
Golden Russet—1, Hector McKenzie. 2, Donald McL. McDonald, 3, Harvey Andrews, Coxheath.
Ribson Pippin—1, Donald McL. McDonald.
Gravenstein—1, Lewis L. Smith; 2, Donald McL. McDonald; 3, Hector McKenzie.
Wagner—1, Donald McL. McDonald 2, E. J. Johnstone, Georges River; 3 Roger M. Lewis Coxheath.
Rhode Island Greening—1, Lewis L. Smith.
Jersey Sweet—1, C. A. Munn; 2, C. M. Meloney, North Sydney
Fameuse—1, Donald McL. McDonald; 2, Wilson Gillis, Georges River; 3, John McMullen.
Ontario—1, Donald McL. McDonald; 2, Andrew McKinnon, Glenville, N. S.
Talman Sweet—1, John McMullen, Georges River; 2, Chas. O. Moffatt, North Sydney; 3 Hector McKenzie, Bacletts Lake.
Mann—1, Lewis L. Smith; 2, H. A. Moffatt, Groves Point; 3, Roger M. Lewis, Coxheath.
Gillaviter—Blowers Boutilier, Sydney River; 2, Donald McL. McDonald.
Stark—1, E. J. Johnstone; 2, Donald McL. McDonald; 3, Lewis L. Smith.
Ben Davis—1, Melvin Morshead, Sydney River, 2, Angus McIntyre, Rear Balls Creek; 3, M. D. Curry.
Wealthy—1, Benjamin Turner, Pt. Edward, 2 M. D. Curry; 3, Hector McKenzie.
Blenheim—1, R. J. Grey, West Bay.
Red Astrachan—1, Angus McIntyre; 2, Donald McL. McDonald; 3, John P. Harvey, Georges River.
Yellow Transparent—1, Benj. Turner, 2, Lewis L. Smith; 3, John McMullen.
Cheshunco Strawberry—1, Mrs. J. W. Allen, North Sydney.
Red Pippin—1, C. A. Munn.
Fall Jennittings—1, M. A. Curry.
Duchess of Oldenburg—1, Dan J. Ferguson, Blackett's Lake; 2, Melvin Morshead, 3 Benj. Turner.
Wolf River—1, Lewis L. Smith; 2, M. D. Curry; 3, Roger M. Lewis.
Emperor Alexander—1, Chas. E. Lewis, 2, M. D. Curry; 3, Dan J. Ferguson.
North Star—1, Roger M. Lewis; 2, Hector McKenzie.
Any other variety—1, M. D. Curry; 2, Angus McIntyre; 3, Melvin Morshead.
Best colelction, any 6 varieties—1, Lewis L. Smith; 2, M. D. Curry; 3, Donald McL. McDonald.
Best collection fruit from one farm, artistically arranged—1, C. A. Munn; 2, Lewis L. Smith; 3, John McMullen; 4, Hector McKenzie.
Best barrel Apples, packed for market—1, Melvin Morshead; 2, J. W. McLennan, Upper Middle River.
Best box apples, packed for market—1, E. J. Johnstone; 2, M. D. Curry.
Collection of Pears—1, Lewis L. Smith.
Collection of Plums—1, Chas. A. Moffatt; 2, C. A. Munn; 3, John McMullen.

SPECIALS

Offered by the Cross Fertilizer Co.
Best collection Sheaf Wheat, Barley, Oats, and Timothy—Chas. Andrews, Coxheath.
Best collection field roots and garden vegetables—John McMullen and Chas. Andrews, equal honors.
For sweepstakes, pure bred cow in dairy class—1, C. A. Munn.
For champion pen of pure bred Shropshire sheep—No Shropshire Sheep.
Offered by J. E. Burchill, Esq., Sydney.
Best five heads celery—Malcolm McLean, Sydney.
Best two heads Cauliflowers—Charles E. Lewis, Coxheath.
Offered by J. C. Douglas, Esq., M. P. P., Glace Bay.
Best crock Dairy Butter—John McMullen, Georges River.
Offered by J. F. Merchant & Sons, Sydney.
Best collection Field Roots and Garden Vegetables, from any farm in Cape Breton Island—John McMullen and Chas. Andrews, equal honors.
Offered by Fanoys, Ltd., of Sydney.
Best exhibit of Sheep for wool producing purposes—W. M. Hill, Pt. Edward.
Offered by J. Fisher Grant, Sydney.
Exhibitor showing best Carriage Horse in Harness—John McQueen, Leitches Creek.
Offered by Ingraham Supply Co. Ltd.
Best loaf White Bread, made from Ogilvie's Royal Household Flour—Mrs. W. J. Moffatt, Little Bras d'Or.
Offered by J. & F. Azar.
To winner of first prize for best home made Bread, Cake and Pastry—Mrs. D. R. Nicholson.
Offered by D. A. Cameron, M. P. P.
For best pen Pure Bred Sheep—W. M. Hill, Pt. Edward.
Best collection seed grain from one farm—John McMullen.
Offered by H. W. Curry, Jeweller, Sydney.
Best collection of Fruit Jellies—Miss Emma M. Clarke.
Offered by Mr. M. N. Druker, Sydney.
Best collection Preserved Fruits—Mrs. D. R. Nicholson.
Offered by Messrs. Thompson & Sutherland.
To the pupil taking the larges number of prizes in Rural School Garden Contest—Earl Moffatt, North Sydney.
Offered by F. & J. Morley.
To the pupil from the City Schools having the best display of Vegetables—Jack Black, Sydney.

Save that spoonful

Four and often five spoonfuls of ordinary tea do not go any further than three of Red Rose Tea.

Less Red Rose is required because it consists chiefly of rich, strong, full-flavored Assam teas.

Use Red Rose Tea and save that extra spoonful.

Kept Good by the Sealed Package

637

Offered by Oak Hall, Sydney.
For the best and largest doz. Brown Eggs—Harvey Andrews, Coxheath.
Offered by Harrington's China Store, Sydney.
To the exhibitor winning the largest number of prizes in dressed poultry—E. J. Johnson, Georges River and John W. Munn, divide this prize.
Offered by S. F. Lelacheur & Co., Sydney.
To exhibitor winning first prize in Crock of Butter—John McMullen, George, River.
Offered by Mr. I. Beiker, Sydney.
For best collection of Ladies Work—Mrs. Julia Le Camber, Glace Bay.
Offered by The T. Eaton Co., Toronto.
For best pair dressed chickens exhibited by individual owner, who has not won an Eaton prize at any Fair since 1914—John Munn, Leitches Creek.
Best collective exhibit of vegetables, (School)—Christmas Island School.
Offered by Neil Ferguson, M. P. P.
To exhibitor winning 1st prize in Grade Ayrshire Heifer, over 12 months and up to 18 months—Wilson Gillis, Georges River.
Offered by A. M. MacLeod, of Thompson & Sutherland, Sydney.
For best Draft Mare or Gelding, any age, bred in Cape Breton County—D. R. Nicholson, Coxheath.
Offered by Kirk & Torey, Sydney.
To exhibitor winning 1st prize, Hooked Hearth Rug (Yarn)—Mrs. P. J. Jackson, North Sydney.

Canadian Bankers Competition

For best Heifer Calf under 6 months, fed by boy under 17, for 6 weeks previous to Fair—1, Roy Oland, Coxheath; 2, Geo. Moffatt, Groves Point; F. Fred McLean, Sydney.

The average man tries to console himself with the belief that he isn't half as big a fool as he used to be.

Root Pulpers

ROLLER BEARINGS

REVERSIBLE KNIVES

For pulping and slicing

Light running and durable

Feed Boilers

STAR FEED COOKER
Stove made of heavy sheet steel, made in 3 sizes, No. 30, 40, 50

Grinders

8 IN. REVERSIBLE PLATES

We are going cut of the Grinder business and have a few left which are being sold at a bargain price. Write us, it will pay you.

If you are in the market for any of the above articles, it will pay you to get our prices.

Remember we also manufacture the Sussex Little Giant Thresher and have a few second hand threshers on hand, which will be sold at a bargain. Sussex Wood Cutters are the best. Watch for our next add.

THE SUSSEX MANUFACTURING CO., Ltd., Sussex, N. B.

THE WAY TO SUCCESS IN FARM BUSINESS IS TO ADVERTISE YOUR PRODUCTS

A great many people ask me: "Does farm advertising pay?" After 15 years of almost continuous advertising I should most assuredly say that it does pay. It is an investment that when carefully and judiciously managed, pays well.

Advertising pays the manufacturer, and the wholesale merchant, as well as the retail merchant. It pays the business man, no matter what line of goods he carries. It pays the farmer and poultry raiser as well as the business man, if properly managed. If you have good stock to sell that you know has merit, don't hesitate to let others know it. There are those who are just as eager to buy as you are to sell, but they will not buy of you unless you let them know what you have to sell. If you were the only person in the world who had stock to sell it would be unnecessary for you to advertise. Advertising is necessary, owing to the simple fact that "there are others."

The first question naturally arising is how best to do it. Go at it just as you would any other business venture; study the question carefully and begin. If you make a mistake, profit by it and try again, starting with the idea that advertising is an investment and not an expense. When selecting a medium, by all means choose a journal along your lines of business. An agricultural paper like The Maritime Farmer, if you are a farmer, reaches just the class of people who are interested in the very thing you have to sell, otherwise they would not be reading it. Select a paper that has been well established, is reliable and has a good circulation. Let this point interest and influence you more than the rate charged for space. The cost of an advertisement is not measured by the price alone, but by what it brings. Some advertising is cheaper at $4 an inch than others at $4 a page. No reliable paper charges a good rate for its advertising space without having a good reason for so doing. Cheap space may be too cheap in the end. That the best is the cheapest in the end is as true in advertising as in everything else.

Having selected your medium and arranged for space, do not make the mistake of trying to crowd too much into it. To many advertisers are careless in their preparation of an advertisement; they seem to think all depends on the medium, but this is not so. Here, too, the man behind the gun is an important factor; there are some things for which he alone is responsible. Anyone can attract attention, but it will count for nothing unless attracted in a pleasing manner. An attractive advertisement is just as far in advance of a poor one as the decorated show window is ahead of the one filled with last year's goods and fly paper.

Having decided where and how to advertise, the next question that confronts you is when to advertise. The best time to advertise is all the time. Spasmodic attempts do not count very much in any line of work; they count for little in advertising. Of course, you will see your first advertisement, but it does not necessarily follow that everyone else will see it, or your second one either. A few people will see one and others will see next one, etc. It is the everlastingly keeping at it that brinys results. People think before they buy; some of them have to do a great deal of thinking before spending their money. They will not think about what you have to sell unless they know about it. They have no way of knowing what you have to sell and how good it is unless you tell them by advertising. By all means keep before the public all the time. It will pay better to use less space and use it continuously than to use a large space occasionally.

Simply giving people your address and price will not go far towards convincing them that you have just what they want. Tell them some of the merits of your stock this month and tell them other good points next month, or tell about the same points in a different way. A business-bringing advertisement must interest people. What interests some today may not interest others, but by changing your advertisement you may interest next month the very people you missed last month. How long would you read a paper that printed all the same matter each week? Not long, I think; you would not be interested in reading that which you had read.

Some people have the idea that when they have sent copy for their advertisement to the publisher, all they have to do is to wait for the rush of orders. If the orders fail to come, it is the fault of the publisher and his "old paper." As a matter of fact, the publisher is just as anxious for your advertisement to pay as you are, and he will do his part toward making it pay, but it is up to you to help. See to it that you frequently furnish changes of copy and that you always stick to the truth. Truth and success are synonymous terms in this matter. It is not enough that people read your advertisements; they must believe them. Truth is always tellable and it will always prove the best policy. Unfortunately there are occasionally a few advertisers who wander from the truth, but there comes a time when their advertising does not pay. If you tell the truth and keep telling it, people are bound to believe you after a while and your advertising will pay.

Remember that every enquirer may be your customer. Give him the attention that you would if you were positive that his first order would be a big one. Go after, and keep after him with the intention and determination of selling to him. Do it in a business-like, convincing manner, and if he finds the goods as represented his second order may be a big one. If his first deal with you is a square one, he will be sure to come again; then he will bring his friends and they will, in turn, bring their friends. People are always willing to pass a good thing along. Treat your customers so that they will pass your name along instead of "passing it up." Fill each order so that it will be like a lucious peach, complete in itself, but tasting like more.

Advertising is a business wonder-worker, but there are no cases on record where it has ever furnished the get-up-and-hustle-ativeness for the advertiser. The advertiser who lacks this element always has time (plenty of it) to tell just how and why he knows why advertising does not pay. He who possesses this necessary requirement is always busy, but will assure you that advertising does pay because he has tried it and speaks from experience.

Whether or not your advertiseing will pay depends upon yourself to a great extent. Go at it with the determination of making it pay and the dollars will be yours. And don't put it off—try it at the first opportunity.

A. E. V.

SHERWIN-WILLIAMS
PAINTS & VARNISHES

Get the Varnish that is made to do what you want it to do.

MAR-NOT
For Floors

Made for floors—to be walked on and danced on, to have water spilled on it, and furniture dragged over it. MAR-NOT is tough, durable, absolutely waterproof. Dries in 8 hours; will rub and take a high wax finish; pale in color; particularly desirable for fine hardwood floors.

SCAR-NOT
For Furniture and Woodwork

has been the means of converting thousands of women to the idea of protection in the home. They use SCAR-NOT to make their furniture, etc., fresh and pleasing,—even boiling water will not affect it.

REXPAR
For Outside Work

Made to protect outside doors, boat decks, spars, store fronts, etc., against every kind of Canadian weather. It is absolutely waterproof and will not turn white, no matter how long exposed.

The Sherwin-Williams agent in your neighborhood has the right varnish for your purpose. Ask him.

Color schemes and suggestions for any part of your building furnished by expert decorator, free upon application and without any obligation.

Send for book—"The A. B. C. of Home Painting"—written by a practical painter, and telling how to paint, varnish stain or enamel every surface in and around the house. Mailed free anywhere.

THE SHERWIN-WILLIAMS CO., OF CANADA, LIMITED,
897, Centre St., Montreal, Que. 110 Sutherland Ave., Winnipeg, Man.
PAINT, VARNISH AND COLOR MAKERS. LINSEED OIL CRUSHERS.

6

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale.

G. C. Cossar, Prop. J. Meiklejohn, Agent.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

SHORTHORN CATTLE

Our present offering is a number of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

J. E. HETHERINGTON
Codys, N. B.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls, ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milcb Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. S. Bloomfield Farm

HOLSTEIN-FRIESIAN ASSOCIATION OF CANADA

Applications for registry, transfer and membersbip, as well as requests for blank forms and all information regarding The Farmers Most Profitable Cow should he sent to the Secretary of the Association.

W. A. CLEMONS, St. George, Ont.

EGGS ALL THE YEAR ROUND

Not a day without eggs in the last four years. This is the record of our bred-to-lay Barred Rocks, Rhode Island Reds and White Wyandottes. Try a setting, one dollar each. Am now booking orders for Chester White pigs. Also offering a few good Holsteins.

Day old chicks, above varieties, 20 cents each during April, 15 cents each after April.

N. W. EVELEIGH,
"The Orchard" Sussex, N. B.

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $1.50 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm

OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams bave records averaging 28.61 lbs. in 7 days, a grandson of Colantha Jobanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

GUERNSEY BULLS!

I offer for immediate sale, tbe Guernsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

Advertise in the Maritime Farmer.

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

OFFERINGS—JERSEY:—

Yearling Heifer, solid color, dropped May 21st, 1916, out of splendid butter making dam, combining "Golden Fern's Lad" and "Sophie's Tormentor" bloods on the side of the sire.

Two Young Bulls, (solid color), one dropped June 10th, 1917, the other Sept. 1st, 1917, and out ot record of performance dams, by our herd leader, "Olinda's Fern Lad" 3269.

And several grades of different ages.

SHORTHORN:—

Three year old Cow, all red, dropped May 23rd, 1914, and due to calve the second time next March. Out of a strong milking dam and by a prize winning sire.

Young Bull, all red, dropped March 17th, 1917, sired by first prize winner of his class at Halifax, 1915, and a grandson of the grand champ on out of a highly bred and good milking dam.

Two Heifer Calves, all red, out of good milking mothers and sired by one of the best sons of "Stately Monarch."

Young Bull Calf, dropped Sept. 26th, 1917, dark red, sire and dam, both first prize winners at Halifax. Address

I. M. LOVITT, M.D.,
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Just now we are offering some fresb calv d cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. butter in 7 days.

Herd sires in service, "Maple Grove Mercena Mercedes," No. 11727, the sire of our 26.54 lb. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter brother to our 25.05 lb. Jr. 3 year old.

For particulars write

R. L. HICKS
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Spring Brook Ayrshires

Present offering, several choice cows and two heifers each twelve months old, also two bulls, one twenty-two months the other twenty months old. All of good size and in splendid condition and from good milking strain.

Write us your needs in the Ayrshire line. We have started many young breeders on the right tract, and have replenished the herds of some of the older breeders and exhibitors. We can supply your wants.

McINTRYE BROS.,
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CLEARING SALE OF AYRSHIRE CATTLE

Having decided to stop dairying, I offer my entire herd of pure bred Ayrshires at private sale. Cows fresh and due to freshen this fall. Young stock from 2 year old heifers down to calves. Also two bulls. I have been testing cows in the R. O. P. test for four years. Any or all of this stock can be had at a very reasonable price if taken within the next 60 days. Write for particulars.

T. J. HAWKINS,
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FOR SALE!

Several heavy Draft Horses, including a few good Mares for breeding. Also eight Horses and young Pigs. We are offering a very fine Bull, 16 months old, color pure white.

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Of choicely bred Ayrshires, Dairy Test Winners, herd numbers 30 head. Before buying, come and inspect our herd and get prices.

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"Minnie Vale of Victoria," another four year old daughter of "Ida Rooker 2nd Vale," has just finished a R.O.P. record of 15.784 lbs. milk and 5.61 lbs. fat, making two daughters in R.O.M. and R.O.P., all showing a much higher milk and fat record than dams. He is also a breeder of show type as proved by his continual winnings in the (get of sire class) at all Maritime Shows.

We can sell a few grand young Bulls by him, different ages, also expect to have a show lot of P. B. and grade females at Halifax, several choice ones to freshen then.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

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Phone 111. - - - - Sussex, N. B.

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Shorthorn Cattle and Shropshire Sheep

Our Shorthorns bave wintered well and we have a fine bunch of Calves for sale at any age required Are booking orders for Rams for fall delivery. Our Lambs weighed from 100 to 115 lbs. last October and the present crop have come strong and extra good type.

C. A. ARCHIBALD, - - Clifton, N. S.

NETHERLAND FARM, Hammond River, N. B.

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WM. S. HARDING, PROP.

We rae all sold out of last years crop of calves. We are now offering some young bull calves sired by Sir Foforit Schuiling. Also a fine litter of young Yorkshire pigs.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewbere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

For sale at present, one bull 20 months old; two bulls 10 months old, almost fit for service. Several bull calves that are dandies and as well bred as you could wish. Also can spare a few heifer calves from one to six months old. Inspection invited.

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BULL'S CREEK FARM
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Present offering:—Bull Calf, month old. Weighed 112 lbs. at birth. Dam made nearly 600 lbs. butter last year and sire's two nearest dams records average 25 lbs. butter in seven days. This calf is a splendid individual and fit to head any herd when mature. Price reasonable if taken soon. Get him if you want to improve your stock.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

HOUDANS

The Favorite French Fowl. Large white eggs and lots of them. A wealth of white breast meat. Combs and wattles protected by heavy crest and beard. 4 hens for $8.00. Cash with order.

WM. J. MacLEOD, Sussex, N. B.

Guaranteed Eggs From Buff Orpingtons

Prize winners Halifax and Charlottetown. $1.25 per setting.

G. CARTER
33 Jubilee Road, HALIFAX, N. S.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

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Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ASSISTANCE TO EXHIBITORS OF LIVE-STOCK

In view of the fact that it is impossible to hold the regular Winter Fair at Amherst, the New Brunswick Department of Agriculture will duplicate any prizes won by exhibitors of horses, cattle, sheep, swine or poultry at the Guelph or Ottawa fairs to be held this coming winter.

Exhibitors must secure a statement from the Secretary of the fair, showing the number of prizes won, the amount of each prize and in what class or classes the stock competed; upon presentation of these statements the necessary checks will be issued.

Further information can be had from the Secretary for Agriculture, Fredericton, N. B.

EXHIBITION AT SHUBENACADIE

This was a real farmers' and schools' exhibition of a high order, that is, the exhibits were large in number and very satisfactory as to quality, and the exhibition possessed different educational features.

Again, the attractions were free of anything of an objectional nature, that is, the grounds were not half filled, as is too often the case, with sideshows and sharpers whose influence is anything but uplifting. In fact the main centre of attraction, after the judging of stock and other exhibits was completed, was the "Pulling Match", which consisted of trials of strength between heavy draft horses, light draft horses, and oxen. Whether this possessed any other real merits or not, it was at least interesting and clean entertainment. We would suggest in connection with this, that it would be a good idea to give the judges the power to prevet competitors from overtaxing their animals in the contest.

Live Stock

The exhibit of poultry was good, all of the chief breeds being well represented.

There must have been well up to three hundred head of cattle shown, made up, mainly of pure bred and grade Holstein and Guernsey stock with a sprinkling of Shorthorn and Ayrshire. This is indicative of the strong trend of farming in this district, from which large quantities of milk and cream are shipped to Halifax and elsewhere. There were several animals that would make a creditable showing at any Exhibition.

Childrens Exhibits

In home garden work between fifteen and twenty schools were represented, and the exhibits of fruit and vegetables in no way suffered by comparison with the exhibits in the same building by the grown-ups. In these exhibits were potatoes, turnips, beets, mangels, carrots, parsnips, citron, pumpkins, celery, corn, cabbage, cauliflower, onions, leeks, cucumbers, tomatoes, pease, beans, radishes and salsify.

Among the lines of manual training and domestic science there was shown a fair exhibit of bread, cakes, canned and preserved fruits and pickles, and quite a full exhibit of needle and crochet work possessing considerable merit. One quite large room was completely filled—both walls and tables—with exhibits of writing, drawing, and sketching and collections of native woods. Much of this work was of a high order. Collections of butterflies, moths, insects, ferns, mosses were quite numerous, instructive and attractive.

It is gratifying to see our exhibitions taking an active interest in furthering the cause of the new and common-sense ideas in the education of our children.

A very sensible feature of the "War Time Lunch" furnished in the grounds was, that it consisted of good bread and butter, pie, tea and coffee and eliminated the use of meats.

The spirit of co-operation between Shubenacadie and Stewiacke in holding the exhibition at these points in alternate years is something to be commended.

J. W. Mitchell,
Assistant Agricultural Commissioner,

BLACKHEAD IN TURKEY

Blackhead in turkeys is caused by a parasite and is characterized by great sores in the caeca (blind intestines) and liver. This miscoscopic parasite causes irritations, destruction of the tissues, and nearly always the death of the turkeys. The characteristic symptoms of the disease are summarized as follow: The loss of appetite and tendency of affected birds to stand apart from the rest of the flock is common. When the intestines are severely affected the birds have diarrhoea and the droppings are liquid and stained orange yellow; this is a characteristic symptom. Diseased birds are frequently found dead under the roosts.

The only sure means of diagnosis, however, is by post-mortem examination of a bird that has recently died. The bird should be cut open to expose the internal organs, and the liver and caeca examined. The presence of large sores in the substance of the liver and in the caecal walls is sufficient evidence for a diagnosis. The caecal sores may vary from a single point to large scabs covering nearly all the lining of both caeca. The liver is very much enlarged, and the sores on it are two-fifths to three-fifths of an inch in diameter.

At the present time there is no known cure for this disease, and the only means by which it can be controlled is by preventive measures. On farms where an outbreak has occurred, al lthe turkeys which have not come down with the disease should be marketed for meat and not sold for breeding. Nor should eggs from an infected flock be used for hatching. It would be well not to attempt to restock a farm with turkeys for several months; and not until a thorough disinfection of the premises has been made, by exposing the grounds to the hot summer sun and by the liberal use of freshly slaked lime in the poultry houses, roosting places, and feeding pens. A three per cent solution of liquor cresolis compositus should be used to spray the walls and all woodwork f the poultry house, including the roosts.

A fresh start may be made by hatching turkey eggs under hens, or by obtaining turkey eggs f,iffi e obtaining fresh breeding stock from a non-infected district. It is recommended that turkey raising be conducted on dry, sandy, well-drained lands, since black head seems to be prevented in large part by dryness of the surroundings.

Farmers' Bulletin 801, recently issued by the Department of Agriculture, Washington, D. C., recommends the use of sodium fluoride for the treatment of chicken lice. When used in powder form, it is sprinkled into the feathers, about the fluff, underneath the wings, on the neck, and on the under parts of the body. It may also be used as a dip; 1 ounce of the commercial powder is dissolved in 1 gallon of water. The entire body of the fowl, excepting the head, is immersed in this solution. One pound will treat 100 fowls, its cost being 40 to 50 cents a pound. Heretofore sodium fluoride has been used effectively in eradicating cock-roaches, and it was only recently accepted as good treatment for the eradication ot fhe chicken louse. It is said to kill any of the seven species of lice which infest chickens.

For Milk, Butter, Cheese, Veal, Holstein Cows stand supreme. If you try just one animal you will very soon want more. Write the
Holstein-Friesian Association
W. A. Clemons, Sec'y, St. George, Ont.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co.. N. B

Ayrshire Cattle

C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

Shorthorn Cattle.

Walter E. Eaton, Upper Cunard, Kings Co., N.S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Shorthorn Cattle !

We have for sale five pure bred Bulls, ages from 12 to 18 months Also some Heifers from one to three years old. Write us for particulars.

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
Sackville, N. B.

Fir Shade Farm Dual-Purpose Shorthorns !

Several years ago I imported from Ontario three Dual-Purpose Shorthorn animals, and now have in my stable at Rothesay eight representatives of this breed. Two of the females are entered in the Record of Performance, and so far have done excellent work. If you feel disposed you might drop in and see these the first time you are in the vicinity. Perhaps some time when you are coming to the city you would let me know, when I could arrange to go to Rothesay with you.

P. R. L. FAIRWEATHER. St. John, N. B.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.

Willow Glen Shorthorns

Entire show herd for sale. See our record at the recent Halifax show. All prize-winners from three year old cows down bred by myself, and sired by Champion and Sire of Champion Stately Monarch. Write for particulars.

A. N. GRIFFIN,
New Minas - - - - N. S.

FOR SALE

A handsome, well-grown Guernsey bull. Sire purchased from the Experimental Farm, Ottawa; dam of equally good breeding, and a heavy producer. Will be sold reasonable. Full particulars on inquiry.

SARAH E. MOSES SMITH,
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Concrete Machinery for Farm Use

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Our No. O POWER MIXER pays for itself in 12 days. PRICE $295.00 complete with Gas Engine. Guaranteed. You can't wear it out and is in a class by itself.

Also Crushers, Brick Block, Tile Machines Mixers, etc. New and Second Hand Gas. Engines Ask for Catalogue A.

WETTLAUFER BROS., LTD., Toronto, Ont.
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Northumberland County Poultry and Pet Stock Association

1st ANNUAL SHOW, NOV. 27, 28, 29.
AMHERST, N. S. CURLING RINK

Entries close November 10th. Prize lists free.

V. G. FULLER, Secretary
Amherst, N. S.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE—New Receipt for Pastry—inexpensive. Send 25c to A. B. C., Londonderry, Col. Co., N. S.

WANTED to work or lease a good farm with intention of buying, (Agricultural College Graduate.) Apply A. B., Maritime Farmer, Sussex, N. B.

PURE BRED Dorset Ram Lambs, sturdy and true to type, $16.00 f. o. b.; also mature Dorset Ram, 4 years; would exchange or sell.—E. A. HOWLETT, Lake Edward, New Brunswick.

FREE—Holman's Big Fall and Winter Catalog, containing over 2,000 illustrations—with bargains on every page Sent free to any address. —R. T. HOLMAN, LIMITED, Summerside, P. E. Island.

FOR SALE—Rhode Islrnd Red Cockerels $2.00, Trio of White Orpingtons $6.00. MOUNT PLEASANT POULTRY YARDS, 62 Park Street, St. John, N. B.

LADIES WANTED to do plain and light sewing at home, whole or spare time; good pay; work sent any distance, charges paid. Send stamp for particulars.—NATIONAL MANUFACTURING CO., Montreal.

FOR SALE—One (1) Gray Shorthorn Cow with Bull Calf Four Months Old, sucking. Price One Hundred and Fifty Dollars ($150 00.) Also one (1) Red Yearling Heifer, Price Sixty Five Dollars ($65.00.) C. FRED FAWCETT, Upper Sackville, N. B.

FOR SALE.—Two Jersey Bulls, fit for service, pure bred dam of one tests 5.2, other 4.8 at freshening, both produce same amount of butter fat, sired by College Fox. His dam, produced 678 lbs. butter one year, herd feeding.—H. 1. NORTH, Canning, N. S.

PURE BRED STOCK FOR SALE—1 Filly 5 mos. old. This filly is bay and nicely marked with white, is a fine mover, with lot of size. Her breeding combines some of the best blood of the Clydesdale breed of horses. Also we have 2 one year o d horse colts that will make great drafters. For particulars apply to A. C & A. M. Burpee, Burton, N. B.

SPECIAL OFFER

On receipt of 70c money order we will forward to any address in Canada, prepaid, packed in mailing tube, ready for framing our latest war picture "VICTORIOUS CHARGE OF CANADIANS at the BATTLE OF COURCELETTE." Size picture 18x24 inches done in nine colors of oil, exact reproduction from original painting by E. P. Gartlan. SEE the heroic charge of Canadians to victory, resulting in capture of village and 700 prisoners,—If you have a relative or dear friend in the FIGHTING 26th NEW BRUNSWICK BATTALION, which took part in this memorable victory you cherish their memory by having one of these pictures in your home. Send in your order NOW. Address

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High Class Jersey Bull

We offer for sale a very choice young Jersey bull, fit for service. Sired by "Romancer," a son of the great "Blue Blood of Dentonia" (Imp.) His dam is bv Fereor (Imp.) Price $100.00, registered. Also a litter pure bred Yorkshire pigs due Oct. 5, and 20 White Leghorn pullets.

ORCHARD HILL FARM
Browns Flats, - - N. B

Barred Rocks and White Wyandottes S. C. and R. C. Rhode Island Reds S. C. W. and S. C. Brown Leghorns

Bred to lay stock of exhibition quality for sale For prices on Cockerels, Pairs, Trios or Pens of he above varieties, write

H. M. McMONAGLE,
Fredericton, N. B.

COCKERELS—Barred Rocks, S.C. Rhode Island Reds and White Wyandottes at $1.50 each.
We breed for eggs and get them every day in the year.

YEAR OLD HENS—One dozen Barred Rocks. Half dozen Reds at $1 each. A pen of Red Sussex three hens and a very fine cock bird.

REGISTERED HOLSTEINS — Two yearling heifers, one eight months bull, two bull calves, would also sell two cows.

Chester White Pigs for sale.

N. W. EVELEIGH,
Sussex, - - - N. B.

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Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 23. SUSSEX, NEW BRUNSWICK, NOVEMBER 6, 1917. Number 3.

Feeding Dairy Cows for Maintenance and Feed Production

At this season of the year many cows in the herds of our most progressive Maritime dairymen, are coming to their lactation period. The succulent pastures and after math have put them in good shape during the weeks since they were dried off, to go forward to do their best in the dairy, providing they are given the care and feed that they deserve, and that the high prices current for dairy produce warrant.

The cows that have been milking for some time, and the heifers and cows due to freshen at later periods, must also be cared for and fed properly to get the former to continue to do their best an dto prepare the latter class for a profitable season's work.

A dairy cow requires food mainly for two purposes:

1. Maintenance.
2. Milk Production.

Under normal conditions, a cow in milk, first takes from her ration a sufficient amount of food for maintenance, and the remainder of the ration is available for milk production.

The amount of food required for maintenance varies with the size of the cow, but is practically the same whether she is dry or is in full flow of milk, while the amount required for milk production varies of course, with the amount of milk she is producing.

A medium-producing cow uses about 50 per cent. of her entire ration for maintenance. The proportion of the ration used for this purpose varies widely, depending upon the quantity consumed. The larger the ration that is used for maintenance, and therefore the greater the per cent. that is available for milk production.

Since a larger percentage of her entire ration is available for milk production, it is evident that a high producer is more economical than a low producer.

Cows that are producing heavily are most likely to be underfed. A heavy producing cow requires a large amount of food to restore the nutrients that she has already supplied for a large amount of milk. If she is to continue to produce at her full capacity, she must be supplied regularly with food sufficient (above maintenance) to restore the nutrients contained in her daily milk flow. If the proper food is not supplied in sufficient quantity, the milk flow will be reduced until the nutrients in the milk correspond to the nutrients that remain after full maintenance is taken away.

This was illustrated by Professor C. H. Eckles in "Dairy Cattle and Milk Production" as follows:—

"When the ration was reduced one-fourth, the amount of food available for milk production is reduced one half, or nearly so, since the reduction in no way affects the maintenance requirement. That is assuming that on a full ration, a cow is producing 40 pounds of milk a day, when the ration is cut down one-fourth, enough food remains above maintenance for only about 20 pounds of milk, and a cow must soon reduce her flow to that amount. Since, after maintenance has been provided, the remainder of the ration is used exclusively for milk production, it is a great mistake from the standpoint of economy to fail to supply to a high-producing cow a ration sufficient to allow her to continue to produce at or near her full capacity.

"On the other hand, a low-producing cow may be fed so much that she will be getting more food than she is capable of utilizing for milk production. Such a cow, after producing as much milk as she is capable of producing, will use the remainder of the ration to store fat in her body.

In an economical ration for such a cow, she is getting a ration that is large enough to meet her requirements. She has no surplus feed to convert into body fat. She will probably produce as much milk on the latter ration as on the former. Hence a list of general rules for feeding cows, usually includes this one: "If cows begin to gain in weight, reduce the ration."

By way of explanation, it should be said that no practical system of feeding can be empolyed by which a cow may be given at all times from day to day exactly the proper amount of feed; neither is it always desirable to do so, for reasons that will be discussed later. However, her requirements should be met as nearly as possible at all times.

As already explained, a cow that is fed above her requirements for maintenance and milk production, may use this surplus feed to convert into reserve material and may store it in the form of body fat. On the other hand, a cow that is not fed enough above maintenance to supply the nutrients for the milk that she is producing, may for a time draw on her reserve material to supply the nutrients lacking in the ration. In this case, the cow gradually loses flesh. She will, however, if the ration is not increased, finally reduce her milk flow until it corresponds to the amount of nutrients contained in her ration.

For several weeks after freshening, cows that are producing heavily, may continue to lose flesh because they are unable to consume enough feed to supply the nutrients for the milk that they are producing, and whatever amount of nutrients that is lacking in the ration is supplied from the reserve material that has been stored up in the body in the past. That is the milk-producing function is so strong in a highly developed dairy cow, that for a time after freshening, production takes precedence over maintenance, and even though the ration is insufficient, production continues and the cow loses weight. She should be fed a sufficient ration as soon as her appetite and digestive system wil lallow it.

It is evident that in preparation for freshening, it is neither a wasteful nor an undesirable practice, therefore to allow cows to gain weight near the end of the lactation period and while dry. Good returns will surely come from feed thus consumed by high-producing cows.

In discussing feeds, energy is expressed in terms of heat that is therms. A therm is equal to the amount of energy or power required to do work which, when converted into heat, will raise approximately 1,000 pounds of water 4 degrees Fahrenheit.

A dairy cow should have protein and energy producing foods mixed in proportion to meet her requirements. Such a mixture is referred to as a balanced ration. If the ration is lacking in either of the above classes of food, the other will not be used to the best advantage and may become waste. The quantity rather than the quality of the milk will be affected. The quality of the milk will not be changed but will remain normal. The cow does not have the ability to change the composition of her milk to correspond to the kind of ration she is receiving.

In case a ration contains more protein than is required, but is lacking in energy, the excess protein may to some extent take the place of energy-producing food, but energy-producing food cannot in any case take the place of protein in a ration, There is, therefore, less damage of feeding too much protein to a dairy cow than there is of feeding too little. For the sake of economy, however, the ration should contain as little as possible of excess protein, because protein feeds are usually more expensive than energy-producing feeds.

When not enough protein is supplied in the ration, the amount of milk produced must be adjusted to the amount of protein available for milk production. For instance, if a cow well along in her lactation period is giving 30 pounds of milk a day, and is changed to a ration that contains protein enough to produce only 20 pounds of milk, she will reduce her flow to that amount, even though the ration may still contain energy enough for 30 pounds of milk or more. The excess energy in such a case cannot be used to the best advantage, and is wasted so far as milk production is concerned.

The Illinois Experiment Station found that cows receiving a balanced ration, produced approximately one-third more than those receiving a ration considerably lacking in protein. Six and one half cows on the balanced ration produced as much as nine cows on the unbalanced ration.

Feeding Standards

The maintenance requirements for cows of different weights, and the production requirements for different qualities and quantities of milk are obtained from feeding standards that have been formulated on the basis of many feeding trials. The followings is taken from Armsby's Standard for

Maintenance Requirement

Weight of Cow Pounds	Digestible true Protein Pounds	Net energy Therms
900	.466	5.59
950	.483	5.80
1000	.500	6.00
1050	.517	6.20
1100	.533	6.39
1150	.548	6.58
1200	.565	6.78
1375	.618	7.42
1425	.633	7.60
1475	.648	7.78
1525	.662	7.95
1575	.677	8.12
1625	.691	8.29

The following standard for production is suggested by Eckles in Missouri Research Bulletin No. 7.

Requirements for Milk Production

Butterfat	Digestible proteins required per pound milk	Energy required per pound milk
Per cent.	Pounds.	Therms
3.00	.050	.26
3.50	.052	.28
4.00	.055	.30
4.50	.058	.33
5.00	.062	.36
5.50	.066	.40
6.00	.070	.45
6.50	.075	.50

ASSISTANT SUPERINTENDENT OF DAIRYING FOR NEW BRUNSWICK APPOINTED

Mr. Ben Gallant, a maritime graduate of the Guelph dairy school, was engaged to be assistant to the late Mr. MacDougall. His term of office was to commence about October 15th, and is now assisting in the campaign being carried on around Moncton for the organization of a co-operative creamery.

Mr. Gallant has been during the past two seasons managing a large co-operative creamery on P. E. Island and has also carried on considerable extension work for the P. E. Island department. He comes particularly well equipped to grapple with our dairy problems because, of his farm experience, his factory experience and his training at Guelph. He also speaks English and French fluently, which is a decided advantage in this province.

A Forward Move in Dairying

The New Brunswick Department of Agriculture, in response to representations from progressive farmers in the counties of Westmorland, Albert and Kent, is conducting a campaign in the above mentioncd counties, to interest farmers in a proposed cream gathered creamery at Moncton.

The proposal issued reads as follows:

Proposal for a Cream Gathered Creamery

"Realizing that dairying offers good inducements to the farmer who goes into it in a business-like manner, with a determination to improve and build up a good dairy herd, by weeding out unprofitable cows and by more careful breeding and better feeding, and knowing that it will ensure a profitable monetary return upon the invested capital and labor, and at the same time conserve and build up the fertility of the farm better than any other system of farming, and also in view of the fact that the home dairy does not offer the same stimulus to the business as the manufacturing of the products co-operatively through the medium of a cream gathering creamery, the Department of Agriculture called a meeting of the representatives from Westmorland, Albert and Kent Counties to consider the advisability of starting a cream gathering creamery in Moncton to serve the sections in those three counties that are not now patronizing a cooperative cheese factory or creamery.

"Representatives from the Federal and Provincial Dairy Divisions attending the meeting, and, after the cooperative cream gathering system had been explained and discussed, it was unanimously decided that it would be in the best interests of the farmers in those three counties to organize and operate a central creamery in Moncton.

The Proposition

"Arrangements can be made to equip an up-to-date creamery ready for operation in the business section of Moncton at a cost of about eight thousand dollars ($8000). Therefore it is proposed to organize a Joint Stock Company, Limited, to the amount of stock subscribed, with an authorized capital of twenty-five thousand dollars ($25,000), divided into one thousand (1000) share of twenty-five dollars ($25.00) each, and at present offer for sale three hundred and twenty shares (320), with a limit of twenty (20) shares to any one person; these shares to be payable as follows:

"Twenty-five per cent. (25 p. c.) at time of incorporation of the company; twenty-five per cent. (25 p. c.) yearly from that date until paid up; the company to be managed by and for the farmers according to a set of by-laws that will be submitted to the shareholders and will have to be approved by them before the business can commence, and all matters pertaining thereto will be thoroughly discussed at a meeting of the shareholders.

Assistance from the Department of Agriculture

"Interest upon the paid up capital at the rate of six per cent. per annum will be guaranteed by the Provincial Department of Agriculture until the business grows sufficiently to meet all legitimate operating charges and interest upon the paid up capital at the aforementioned rate, but this guarantee will not extend for a longer period than five years fro mdate of incorporation.

Results in Other Places

"The largest and most successful creameries in Canada are those operated on the cream gathering system, because an extensive territory is served, a large output is ensured and the operating expenses are correspondingly low, thus giving the farmer a better returne from his cream.

"The following figures, taken from the annual statements of the Scotsburn Creamery Company at Scotsburn, Pictou County, N. S., serving the territory from Pictou to Oxford Junction, will show the development that has taken place and the money paid fr cream in the last twelve years:

Statement Scotsburn Creamery, Pictou County, N. S.

Year	No Patrons	Lbs. Butter Fat	Net Value per lb. to Patrons	Cash to Patrons	Deficit	Surplus
1905 ..	26	11,142	21.42 cts	$2,153.20	$768.06	$.....
1906...	32	13.307	21.73 "	2,066.71	594.77	.....
1907...	35	10.054	22.31 "	1.943.04	538.75	.....
1908...	38	16,122	24.22 "	3.400.51	213.36	.....
*1909..	81	34,325	24.19 "	6.801.18	28.67	.....
1910...	204	107,715	24.40 "	22.146.04	.....	917.53
1911...	380	170.847	25.85 "	36,181.99		
1912...	423	181,614	30.14 "	44.788.08		
1913...	450	229.574	27.97 "	55,305.06		
1914...	502	277.672	28.07 "	65,678.48		
1915...	538	293.552	30.00 "	76,520.54		
1916...	592	327,715	34.25 "	97,077.06		

"This creamery was built by the Scotsburn Creamery Company and operated by the Dairy Division, Ottawa, until 1911, when the management was taken over by the Creamery Company. It was operated as a whole milk creamery until 1908, when the cream gathering system was adopted, and in 1909 the first cream was shipped in by rail.

"There has been a substantial surplus each year since 1910, after paying operating expenses, interest on capital and for improvements upon the plant each year.

Moncton as a Centre

With the railway connections centering in Moncton, practically every point in the three counties can be served and dairy experts familiar with the outlying districts agree that a better centre for a business of this kind cannot be found in the Maritime Provinces; and again, the retail trade for high-grade fresh made creamery butter and butter-milk in a town the size of Moncton is an advantage that many of the successful creameries now in operation do not enjoy."

A series of meetings have been arranged by Mr. J. H. King, the new District Representative for Agriculture, for the three counties, commencing on October 15th and continuing thereofter until early in November. The Department of Agriculture has furnished men in twos to address meetings in the various agricultural centrs, and bring the proposition to the attention of the farmers.

The speakers are as follows:—

W. R. Reek, Deputy Minister for Agriculture; J. H. King, District Representative; Rev. P. C. Gauthier, the father of co-operation in Prince Edward Island; Benj. Gallant, one of Prince Edward Island's foremost butte rmaking experts, who has just recently joined the staff of the New Brunswick Department of Agriculture; Harvey Mitchell of the Dairy Division, Ottawa, one of the foremost authorities on dairying in Canada; David W. Murray, President of the Scotsburn Creamery Company, the company that put Scotsburn on the map as a butter making community; W. A. McKay, Dairy Superintendent for Nova Scotia; A. J. Gaudet, of the Cow Testing Association, Ottawa, and M. A. MacLeod, Superintendent of Agricultural Societies in New Brunswick.

The attendance at the meetings has census of opinion expressed by the most progressive farmers in each locality is that it is a move in the right direction.

An option has been taken of a building on the Main Street in Moncton. The building in question may be purchased or rented at reasonable figures. Offices in the building may be been very encouraging, and the conrented for a sufficient amount to cover the interest in the investment, providing the building is purchased, or pay the rent if taken on a rental basis.

The retail butter trade and the sale of the by-product, buttermilk, will bring the producer nearer the consumer and will give the producer the best possible price for his cream.

Several business men in Moncton would gladly take all the shares of stock that are being put on the market, but the cream producers will be given the first opportunity to subscribe, and thus make it a co-operative, centralized creamery, managed by the farmers themselves, with the assistance of the best buttermaker available and the Department of Agriculture's dairy experts.

Butter will be manufactured for a certain rate per pound, which rate will cover, the butter-maker's salary, salt, parchment, boxing, freight on cream from point of shipment, interest on investment and other incidental expense.

This is the plan followed at the successful Scotsburn Creamery, and the figures in the preceding table will show the reader the net return per pound for butter-fat, after three cents per pound for butter manufactured had been deducted.

Scotsburn started operations as a sorry showing until they changed over whole-milk creamery and made a sorry showing until they changed over to a cream gathered creamery, when a new era dawned on Scotsburn. Dissatisfied patrons became satisfied patrons. The amount of money paid to patrons increased by leaps and bounds until this year they will pay in the vicinity of $130,000 to men who have pinned their faith for a bigger and better Scotsburn and the dairy cow.

Farmers living in the remote corners of the three counties, wil lhave the same advantages as the farmers living near Moncton. They will all receive the same amount per pound for their butter fat. Farmers living at some distance from railway stations may well club together and take turns at delivering the cream to the station. The more they co-operate the better will they be satisfied.

Westmorland, Albert and Kent counties have possibilities that when properly developed along dairy lines, will help to increase the revenue of the farmers and help estabish a reputation for New Brunswick as a butter producing community.

Committees are now at work in the various centres where meetings were held, to get a census of the cow-population and other information that wil lbe of use for organization purposes.

Mr. J. H. King will call two delegates from the various districts, to meet at Moncton early in November, when organization will be proceeded with and matters arranged for getting things in order for an early start next spring.

Eradicating Tuberculosis in Cattle

1. You must be honest with yourself. That is, take it for granted that there are some animals in your herd that have tuberculosis; that you desire to know which ones they are; that you will not sell them except as tubercular; that you want to protect your animals from the spread of the disease; that you want to raise a healthy young herd; and, finally, that you want to do everything you can to accomplish these ends. As the old saying goes, "he who fools himself is a fool."

2. The infectious disease known as tuberculosis is a subject with which both the Federal and State governments have struggled for the past period of years in their efforts to eradicate it. Very little substantial headway has been made.

3. The plan which we recommend, we have named the "Fred F. Field Method of Eradicating Tuberculosis," because it has been successfully carried out at Dutchland Farms by the Fred F. Field Holstein Company during the past three and one-half years, and is still working out successfully. Its practical working has been demonstrated. It is based on sound scientific and common sense theories.

4. First is cleanliness. Keep the cobwebs swept from your stables and have them properly white-washed as often as necessary to keep clean.

5. Get all the sunlight into your stables that is possible. It is absolutely impossible to get too much.

6. Have plenty of fresh air in your barn. You may decide the way to get the fresh air. Modern ventilating systems readily accomplish this result, but if you don't desire and cannot afford to use them, very simple means will accomplish perfect ventilation or a continuous supply of fresh air. As long as there is plenty of it and it is fresh, that is all that is necessary. Fresh air is very essential, as it is very important that, as far as is practicable, every breath the animal takes should be new air going into her system and not foul air of any sort.

7. In other words, treat the animals as human beings are treated for tuberculosis—that is known as the "fresh air" treatment.

8. Treat the mangers, stanchions, feeding boxes and floors with disinfectant solution. There are several kinds used that are inexpensive, but the stable fittings and floors must be washed and kept clean and well saturated with germ killer as often as necessary to keep them clean, at least once a week. The modern stable fittings are more easily cleansed, but they are not necessary or essential in the work. Wood floors and fittings can be made clean and disinfected. Manure should be promptly removed from stables to eliminate any possible danger from this source.

9. Now we have our barn ready to house the cattle, let's start in to treat the cattle and their offspring.

10. Assume, if you please, that every breeding cow that you own is tubercular. Now that is solely for your own protection. The animal may be perfectly healthy, but you are taking no chances. Later on we make recommendations about the treatment of these breeding animals.

11. As soon as the cow drops her calf, the calf should be taken away immediately, never allowing the mother to even' smell of it, to say

nothing about suckling it, as the calf never should be allowed to have any of its mother's raw milk. If you haven't a calf barn, this calf should be taken away so that it will not come in contact with any of the other animals, old or young, that are reactors or which you have assumed to be reactors.

12. Purchase a "pasteurizer" which has the "holding" process, which is equipped with a reliable thermometer; that is to say, it heats the milk to 145 degrees and holds it there thirty minutes.

13. Feed your calf on this pasteurized milk from the start. Feed no other. This milk should invariably be fed at blood heat or the same temperature as milk freshly frawn from the cow. The percentage of loss of calves at Dutchland Farms for the past three and one-half years has been less under this system of feeding than when we were feeding raw milk or allowing them to suckle their dams.

14. Never allow these calves, from the time they are born, to mingle with any reacting animals, or any cattle, old or young, which you have assumed to be reactors. As they get older, never allow them to drink water from the same trough or the same bucket that has been used for that purpose by the cattle assumed to be reactors. Water is a carrier of tuberculosis germs.

15. When they are old enough to turn to pasture, have a double line of fence, ten to fifteen feet apart, between your reacting animals or the assumed to be tubercular ones, so that your reacting animals and your clean ones cannot get their noses togetrer or in any way come in contact with each other, for such practice is certain to result in infection.

16. You are now raising up a clean herd of animals, if this system has been carried out, among which you will have practically no reactors. It is possible that you might have one occasionally, but in the great number which have been tested at Dutchland Farms in the three and a half years under this system, there have been only three reactors in the young animals that were brought up under this system. Application of the tuberculin test at this period (say as yearlings) will determine the progress made in "cleaning up." Employ only a veterinarian of known integrity and skill; such a man will use only a standard preparation of tuberculin. The services of such a man cost no more than those of an ordinary one.

17. The thing of vital importance to do with your breeding animals is to have samples taken of the sputum or secretions of the lungs and throat for the purpose of bacteriological testing. A skilled veterinarian can get these samples from a cow's throat by the use of the sputum cup. Such a skilled veterinarian will have such necessary instruments and laboratory connections as will enable him to efficiently do this work. If your local veterinarian is not experienced in this work, we will furnish the name of a competent man. The object of this sputum test is to determine whether the cow is passing off from the nose or throat the infectious tubercle bacilli which spread the disease. If the results of the sputum culture show the presence of the disease germs, it means that the animal is a "spreader." It is well to have your breeding cows tested at least once, by a competent veterinarian, with the tuberculin test; if reactions result, it does not follow that all reactors will by any means be "spreaders." Under this method unless a reactor proves to be a "spreader," she is not at any time any source o fdanger, although she may at any time become so; but applying the sputum test will protect you. The use of the pasteurized milk for the calves eliminates the possibility of infection from this source; the sputum test has determined whether or not the cow is a "spreader." If a "spreader" has been found, she should be removed from the herd. If valuable for breeding purposes, she should be isolated completely. If not valuable, destroy her.

Under the Field method pasteurization differs from the ordinary understanding of the term. Under this method the milk is heated to 145 degrees Fahrenheit (a thermometer must be used) and held there for a period of thirty minutes. There must be no variation from this method. So-called pasteurizing the milk by scalding is dangerous and will certainly result in the death of the calves. No variation from the method indicated is permissible.

18. By this method you are making the milk of the animals in your breeding herd safe, that is, by the "holding" pasteurizing process, whether the animals are actually reactors or only assumed to be for the purpose of carrying out this method. Now don't get confused by the word "pasteurization" and think it means a lot of complicated machinery. It does not. It is derived from a great French scientist named PASTEUR who discovered that some disease germs were killed by heat at a lower temperature than boiling. Boiling sterilizes. A lower temperature kills the bad germs without changing the physical character of the milk and it does not kill the good germs which are necessary to the life and health of the animal. If the purchase of a standard pasteurizer cannot be afforded, it is still possible to exercise this method by the use of ordinary home utensils, but in this event, the greatest care must be exercised to keep the milk stirred continuously during the process and the thermometer constantly consutled to see that the milk is held at 145 degrees for thirty minutes. The use of a standard pasteurizer is recommended in all cases, for by the use of kitchen methods, simply, the liability of failure in properly pasteurizing the milk is too dangerous a risk to be assumed except by the most careful people.

19. Now by carrying out this method, in a few years you will come to realize that you have turned what liiked like a serious loss to you into a profit. In other words you have grown up a new, healthy herd, while at the same time you have preserved your tubercular breeding herd without any material loss, which herd can be maintained until age and condition indicate the time for their disposal.

20. Calves' navels should be kept disinfected until they are practically dried up. Calves' feeding pails and buckets should be kept clean and scalded. Have plenty of sunlight and fresh air where the calves are kept. Calves' bedding should be dried and not left wet for the calves to lie down in. In other words, treat them humanely, as you would your own babies.

"It's a common sense method—keep everlastingly at it."—Holstein Friesian Assn. of America.

Chop Feeds

The term "chop" or "chop feeds" is a general one used to denote a class of feeds which are essentially oat products. Mill feed, cattle feed, oat feed, moulee chop are common names for these feeds used by the local grist mill, while some of the larger mills put out this product in quantities under specific brand names. Certain of these feeds consist entirely of crushed or ground oats, others consist almost entirely of the by-products of the oat meal mill (including oat hulls) while others contain a certain admixture of corn, barley, etc. They are extremely variable in composition. The Commercial Feeding Stuffs Act, under the administration of the Department of Inland Revenue contained many complaints regarding these chop feeds. In certain cases it was stated the feed was refused by all classes of stock and only eaten with repugnance after being mixed with bran or middling. In any other cases, persistency in feeding the material resulted in the death of swine, calves and poultry, apparently partly from starvation and partly from digestive disorders brought on by the low nutritive value of the feed and its coarse, fibrous nature.

We obtained a few samples of these feeds respecting which complaints had been made, collecting them in Ontario, Quebec and British Columbia, and submitted them to analysis, with the following results.

Analysis of Chop Feeds.

No.	Water	Protein	Fat	Carbohydrates	Fibre	Ash
1.	8.74	4.77	1.87	50.97	28.01	5.64
2.	9.83	9.69	2.54	63.93	10.70	3.31
3.	8.40	9.95	1.59	64.64	12.00	3.42
4.	7.08	8.85	2.56	61.19	12.50	7.82
5.	6.65	6.58	1.74	55.46	24.42	5.15
6.	5.73	6.80	2.28	57.67	22.07	5.45
7.	11.33	8.14	2.13	66.85	8.68	2.87

does not require any registration of chop feeds nor any guaranty as to their percentages of protein, fat and fibre. However, the "Adulteration Act" has established a standard of quality for certain grain products and it states that "Chop Feed is whole grain of one or more kinds more or less finely ground, and contains not less than ten (10) per cent protein, not less than two (2) per cent of fat and not more than ten (10) per cent of crude fibre." All chop feeds not carrying a guaranty as to nutritive value (minimum percentages or protein and fat and maximum percentages of fibre) ought to conform to this established standard or be considered adulterated.

The correspondenc of the Division of Chemistry during the past year has

While we do not claim that these analyses are typical of chop feeds as sold generally throughout the Dominion, it is highly significant that not one of the seven samples examined containet the minimum percentage of protein required by the standard, that they are all exceedingly low in fat and that they with one exception contain an excess of fibre—three of them over 20 per ient. Taken as a series they are of extremelf low feeding value and several of them, notably Nos. 1, 5 and 6 are praitically worthless.

These feeds ranged in price from $20 to $35 per ton. In a few of them there was a sprinkling of corn, but in the majority of them the proportion of meal was very small; they were all

(Continued on page 90)

Results With Root Seed Growing in Canada

Among the problems that the great war has created for Canada, the problem of growing root seed, i. e., seed of swede and fall turnips, mangels, and field carrots, may seem rather insignificant to the average Canadian citizen. Yet, that problem is to-day one of the most vital to the Canadian farmer, notably the dairy farmer, inasmuch as it is directly connected with the providing of that indispensable stock food that is generally referred to as "roots."

In 1915, Canada imported a total of 1,927,313 pounds of turnip seed, and 1,056,060 pounds of mangel and beet seed. In 1916, the import of turnip seed dwindled to 150,855 pounds and the import of mangel and beet seed to 636, 797 pounds; and for 1917, the figures stand at 291,379 pounds for turnip seed and 891,677 pounds for mangel and beet seed. This means that Canada imported a total of these most important farm seeds, in the years of 1916 and 1917, which falls short of the import of 1915 along oe, roughly, one million pounds. It should be added that practically every pound of field root seed used in this country is of European origin.

That Canada was running a great risk of having her supply of root seed from Europe shut off, partly or wholly, as a result of the war was regretfully predicted in an Experimental Farms bulletin entitled "Growing Field Roots, Vegetable and Flower Seeds in Canada", issued early in 1915. In the said bulletin, an appeal was made—as has also repeatedly been done later in many issues of "Seasonable Hints" distributed by the Dominion Experimental Farms System—to Canadian farmers and others interested in the seed supply being kept up, urging that Canada could not afford to take the risk of relying on import from Europe either under prevailing war conditions, or immediately after the conclusion of peace. It was emphatically stated that **"Canada should make herself independent of foreign markets and produce at home what now has to be bought from abroad.** Canadian farmers should not only try to meet the emergency demand for field root seed in the immediate future, but also try to establish a permanent seed-growing industry which would make them independent of any other country." The bulletin went further and predicted "that many districts of Canada where root seed growing is unknown at present, will prove themselves not only able to produce seed of good quality, but also to be especially well adapted to seed raising."

To what extent this prediction was justified, will be shown by the data following, showing what results in root seed raising were obtained in the year of 1915. In that year the Central Experimental Farm at Ottawa raised, from a field about 1½ acres a first class mangel seed crop at the rate of about 1,150 pounds of seed to the acre. Mangel seed was produced at the Experimental Farm at Agassiz, B. C., at the rate of 2,100 pounds per acre, at the Experimental Station at Lennoxville, Que., at the rate of 1,150 pounds per acre and at the Experimental Station at Kentville, N. S., at the rate of 2,100 pounds per acre. The same year the Experimental Station at Lennoxville, Que., raised swede turnip seed at the rate of close to 1,250 pounds to the acre.

But what about the profit? Does it pay the grower to raise that kind of crop? As an answer, it may be stated that there was, according to records kept, a net profit of about $80 per acre from the mangel seed crop at the Central Experimental Farm, Ottawa, in 1915. And this in spite of the fact that the men handling the crop were quite unfamiliar with the same.

The above figures indicate, most decidedly, that there are, in Canada, great opportunities for developing a new field in agricultural activity promising substantial rewards, from a profit standpoint, to those who take up root seed growing conscientiously and in a business-like manner.

May it also be added that the raising, in Canada, of the seed needed in the country will directly help to increase the average yield of the root crops of the Dominion. This will, however, be discussed in a special article.

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And Co-operative Dairyman
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NOVEMBER 6, 1917.

DATES OF ISSUE.

November 6-20
December 4-18

WHO IS RESPONSIBLE?

Dr. G. M. Mitchell, writing in a recent issue of The Maine Farmer says:—

A young man came to the writer a few days ago with the statement that he had been on his farm five years and, with a young family, was trying to get a living. He said that until this year he had gained a little and then came this significant statement: "Doctor, if it hadn't been for my cows, I should have gone bankrupt this year. The government came after us all last spring to plant all we could, and I felt it my duty to respond and did my best. You know the floods came and washed my fields, cold weather retarded growth, and the early frost killed the sweet corn, beans and all my vegetables, and the potatoes rotted before I got them dug. I hope my cows will save me, provided the same government does not step in and prevent us from getting a fair price for milk."

Here is the story coming from many sources, but in none more touching than from this young man who with wife and four children owing his farm five years ago, is now conscious of the injury produced by seeking to answer the call of the officials at Washington and in Maine. He knows that all the time he has been seeing his crops go out from under him, from no fault of his, every ship builder, every steel manufacturer, every woolen mill doing government work, every munition factory, and so on to the end of the chapter, has been guaranteed cost and a big profit. Not content with this, if there are labor troubles, the same government steps in to smooth out matters by paying more. Dollars for every other manufacturer, but not one cent for the man struggling to save his farm and grow all he can to help feed others. The day of reckoning is certain to come, for this short-sighted policy is sure to bear fruit and the rank injustice bring a righteous verdict. That injustice rests on the full recognition of all other classes and industries and total disregard of the men on the farm, except to spend millions to support an army going about to instruct them how to grow more, that they may sell for less. Is it any wonder men are leaving the farm to seek employment in other industries?

When the draft was announced, it was stated that the farm and farm labor would be exempt, but, instead, the most strenuous appeals for alolwing necessary help to remain until crops are harvested are refused. Here is the situation facing the farmers of the east, and it is no wonder there is unrest on every hand. When another spring comes round and the attempt is made to get farmers to plant more, we shall meet a different condition than last May and June. The farmers next year will look out for their own interests first, last and all the time, and let the other fellow do the same. All this friction might have been prevented had those in authority played fair with the farmers and treated them as all other industries were treated.

No man has heard anything about special favors, but the claim all along has been for simple justice. That being refused, is it any wonder that growers propose hereafter to go it alone and look after their own interests, plant what they please, when they please, and as they please? When men honestly seeking to answer the urgent appeal of officials, later face bankruptcy from no fault of theirs, and know all the time that every other class is protected, one is surprised at the coolness manifested. So far as known, nothing is being done by any of our chosen representatives at Washington to relieve the situation. Those who have so patiently striven to uphold and strengthen all agricultural efforts and make more secure the character and quality of life on New England farms, view the situation with alarm.

When the farmer of today has met all the opposition others must overcome, he still has the great forces of nature, the elements of drouth, flood, tempest and cold, as well as a myriad army of pests, the ilke of which has never been met before. If this nation is to be saved, it must produce the food of support for its millions, and no problem before the government is so vital today as the upbuilding of a live agricultural sentiment. Give the farmers an incentive in the form of such protection as is granted all others, and there will be no necessity for special instruction—for every man will do his best. Continue to withhold that protection and the injustice will do more to destroy than all else combined. Put responsibility where it belongs and stand to defend our position.

Dr. Mitchell instances cases in the foregoing paragraphs that are not altogether unfamiliar in Canada. Many of the farms of the Mritime Provinces are depleted of their young manhood and unless exemption from military service is asked for the young men who are too proud to ask for themselves, production in these provinces will surely suffer.

THE ONE SOW

In innumerable instances, one sow can be handled to advantage and an economic production of pork brought about, where five sows would mean production of pork at a loss. The one sow would largely mean utilization of what is now waste; five sws the purchase of high-priced feed for turning progeny into pork, with the result of high cost of production. The one-sow man is the farmer who can come to the rescue of the nation in this emergency. Make it possible by furnishing the necessary credit at a lo wcost. The same principle applies to both sheep and cattle. It is the man who will produce in small units whom we must rely upon to get our increased supply of live stock.

PROFITABLE PARTNERSHIP

If your farm work is getting too heavy for one pair of shoulders, why not take the son into the partnership? Many farmers have already tried the plan f including the boys and girls in the corporation that is running the old farm, yet a few have dreaded to "let go" a part of the responsibility and a part of the benefits coming from the farming operations. It has proven the very best method of keeping the boys and girls engaged in agricultural pursuits—it has made them love their work.

* * *

Every breeder of cattle will do well to read and carefully study the article on another page of this issue, entitled The Eradication of Tuberculosis in Cattle. This is the substance of an address by Fred F. Field, before the Holstein Friesian Association of America, held last summer at Worcester, Mass.

A committee was appointed to have the remarks compiled and printed for the benefit of breeders generally.

Any information that will tend to help the breeder in eradicating this bane of cattle raising should be of very great interest. Inasmuch as Mr. Field's remarks are based upon his actual experience, and his method of eradicating this dread disease, is therefore soundly practicable instead of being merely theoretical, we believe that cattle breeders genrally will be interested in knowing just how his plan works.

* * *

After considerable negotiation and discussion between the Department of Agriculture and the Canadian Railways appointed a small representative committee to confer with the Minister in the matter of the continuance of the half rate privilege of L. C. L. shipments of pure bred stock in Eastern Canada. At a conference between the Minister and the members of this committee, which was held in Mr. Burrell's office recently, the committee, on behalf of the Railways, agreed to continue the half rate privilege, it being provided, however, that the minimum charge for any single shipment wil lbe $4.00, unless the full tariff rate makes a lower charge in which case the latter will apply.

* * *

Farmers, conserve the scrap iron of worn-out machinery! Set the boys to gathering it up and placing it where it will not deteriorate with rust, for it will all be required before the much hoped for peace has been signed. By collecting and selling now while prices are high, you will not only favor yourself, but your country, which needs this metal right now. The farmers of a community can collect and co-operate in marketing this by-product, thereby saving much expense necessary when individual shipments are made. Bear this in mind, and do the collecting before snow comes to hide or frozen ground to hinder.

* * *

A mellow hide is the sign of profit in steer feeding.

* * *

The filling of the silo may be done most cheaply by co-operative ownership of machinery and by the old-fashioned plan of "changing works."

PRIZE WINNERS AT YARMOUTH EXHIBITION

HORSES

Standard Bred

Mare, 4 years old and upwards—1, Kenneth Morton.

Hackney Horses

Filly, 3 years old—1, Chas. L. Cann.

Clydesdale Horses

Mare, 4 years old and upwards—1, H. P. Milestone.

Filly, 1 year old—1, Murray Crosby.

Mare, any age, diploma—H. P. Milestone.

Roadsters

Mare or gelding, 4 years and upwards—1, S. F. Nickerson; 2, Edw. Rose; 3, Alvin W. Robbins.

Filly or gelding, 3 years old—1, O. K. Milestone; 2, Mrs. T. B. Stubbard.

Filly or gelding, 2 years old—1, J. F. Fraughten; 2, Lloyd Cook; 3, S. F. Nickerson.

Filly or gelding, 1 year old—1, Windon Morton.

Foal of this year—1, Alice H. Churchill.

Brood mare with foal by her side—1. Alice H. Churchill.

Carriage

Mare or gelding, 4 years and up—1, Austin L. Robbins; 2, Wm. H. McConnell.

Filly or gelding, 3 years old—1, Wm. A. Killam; 2, Wentworth Hemeon.

Filly or gelding, 2 years old—1, Chas. Bell; 2, Jas. B. Allen.

Filly or gelding, 1 year old—1, Jas. B. Allen.

Foal of this year—1, W. Hemeon.

Brood mare with foal by side—1, W. Hemeon.

Matched pair—1, Geo. T. Bain.

Mare and 3 of her progeny, diploma—W. Hemeon.

Mare or gelding, any age, diploma—Alice H. Churchill.

General Purpose

Mare or gelding, 4 years and up—1, H. W. Corning; 2, Fred Pitman; 3, Harris Crowell.

Filly or gelding, 2 years old—1, Wm. H Palmer; 2, Cann Bros.; 3, Roy Cleveland.

Filly or gelding, 1 year old—1, Mrs. Edgar Cann.

Foal of this year—1, Edson Foote; 2, Vernon Cleveland.

Matched pair—1, Mrs. Clifford Cann.

Mare or gelding, any age, diploma—1, Wm. H. Palmer.

Light Draught

Mare or gelding, 4 years and up—1, Fred L. Rose; 2, Geo. W. Murphy; 3, Lloyd W. Cook.

Filly or gelding, 2 years old—1, Mrs. Clifford Cann; 2, Geo. W. Killam; 3, Mrs. Edw. Cann.

Filly or gelding, 1 year old—1, B. B. Killam; 2, Harold McConnell.

Foal of this year—1, B. B. Killam.

Brood mare with foal by side—1, B. B. Killam.

Matched pair—1, Chas. Butler.

Mare or gelding, any age, diploma—Mrs. Clifford Cann.

Heavy Draught

Mare or gelding, 4 years and up—1, Benj. Bain; 2, Vernon Allen; 3, A. Corning.

Filly or gelding, 3 years old, over 1200 lbs.—1, Wm. A. Churchill.

Filly or gelding, 2 years old, over 1000 lbs.—1, Hartley Pitman; 2, A. Corning; 3, Fred L. Rose.

Filly or gelding 1 year old—1, Rupert Pitman; 2, Edmund Dennis.

Foal of this year—1, B. B. Killam.

Brood mare with foal by side—1, B. B. Killam.

Matched pair—1 Hugh Cook.

Mare or gelding, any age, diploma—Benj. Bain.

Special Prizes

Roadster, 4 years old and up, in gear—1, S. F. Nickerson; 2, Edw. Rose; 3, Alice H. Churchill.

Carriage horse, 4 years and up, in gear—1, Geo. T. Bain; 2, Miss Clara Caie; 3, Austin L. Robbins.

CATTLE

Shorthorns (reg.)

Bull, 2 years old—1, Dr. I. M. Lovitt.

Cow, 4 years old—1, 2, Dr. I. M. Lovitt.

Cow, 3 years old—1, 2, Dr. I. M. Lovitt.

Heifer in milk, 2 years—1, Dr. I. M. Lovitt.

Heifer, Sen. 18 mos. old and under 2 years—1, Dr. I. M. Lovitt.

Heifer calf, 6 mos. and over—1, Dr. I. M. Lovitt.

Heifer colf, 6 mos. and under—1, 2, Dr. I. M. Lovitt.

Bull and three of his get, diploma—Dr. I. M. Lovitt.

Grades

Heifer Sen., 18 mos. old and under 2 years—1, Wm. A. Pinkney.

Ayrshires (reg.)

Bull, 1 year old—1, Jas. B. Allen.

Heifer in milk, 2 years old—1, Jos. A. Ellis.

Grades

Cow, 4 years and up—1, Jos. A. Ellis; 2, Adolph. Corning; 3, Ira Moses.

Heifer, 2 years old, dry—1, Jos. A. Ellis.

Heifer, Sen., 18 mos. old and under 2 years—1, Jas. B. Allen.

Heifer, Jr., 1 yr. and under 18 mos.—1, Jas. B. Allen.

Heifer calf, 6 mos. and over—1, 2, Jas. B. Allen.

Jerseys (Reg.)

Bull, 3 yrs. and up—1, Cann Bros.; 2, John C. Corning; 3, W. L. Cook.

Bull, 2 years old—1, Benj. Bain.

Bull, 1 year old—1, H. P. Milestone; 2, Chas. L. Cann; 3, Cann Bros.

Bull calf, 6 mos. and over—1, I. M. Lovitt; 2, Cann Bros.; 3, Chas. M. Rogers.

Bull calf, 6 mos. and under—1, I. M. Lovitt; 2, 3, Cann Bros.

Cow, 4 years and up—1, I. M. Lovitt; 2, 3, Cann Bros.

Cow, 3 years old—1, Cann Bros.; 2, John C. Corning; 3, A. Corning.

Heifer in milk, 2 years old—1, Cann Bros.; 2, John C. Corning; 3. Chas. M. Rogers.

Heifer dry, 2 years old—1, Cann Bros.; 2, 3, John C. Corning.

Heifer Sen., 18 mos. old and under 2 years—1, Cann Bros.; 2, 3, I. M. Lovitt.

Heifer Jr., 1 year and under 18 months—1, 2, Cann Bros.

Heifer calf, 6 mos. and over—1, Cann Bros.; 2, I. M. Lovitt; 3, J. D. Burrill.

Heifer colf, 6 mos. and under—1, Cann Bros.; 2, Stephen Bain; 3, I. M. Lovitt.

Champion bull, diploma—Cann Bros.

Champion female, diploma—Cann Bros.

Bull and 3 of his get, diploma—Cann Bros.

Female and 2 of her offspring, diploma—Cann Bros.

Jerseys (Grades)

Cow, 4 years and up—1, John C. Corning; 2, Ross W. Durkee; 3, Frank Cook.

Cow, 3 years old—1, Alfred Servant; 2. I. M. Lovitt; 3, Ross W. Durkee.

Heifer, 2 years in milk—1, John S. Deveau; 2, I. M. Lovitt; 3, Ross W. Durkee.

Heifer, 2 years old dry—1, Alfred Servant; 2, John C. Corning; 3, Jas. Earle.

Heifer Sen., 18 mos. old and under 2 years—1, Clarence Rose; 2, John C. Corning; 3, J. Boyd.

Heifer, Jr., 1 year and under 18 months—1, Ross W. Durkee; 2, J. Boyd; 3, Clarke M. Killam.

Heifer calf, 6 mos. and over—1, 2, Wilbur Porter; 3, Alvin Churchill.

Heifer calf, 6 mos. and under—1, C. M. Killam; 2, Alfred Servant.

Devons (Reg.)

Wm. A. Pinckney made a sweep in this class, capturing 10 1sts, 3 2nds, 4 diplomas.

Bull calf, 6 mos. and under—1, Harold Pinkney.

Heifer calf, 6 mos. and under—1, Harold Pinkney.

Devons (Grades)

Cow, 4 years and up—1, Henry Pitman; 2, Dorothy B. Cook.

Heifer, 2 years, in milk—1, Henry Pitman.

Heifer, 2 years, dry—1, 2, Martin Boudreau.

Heifer, senior—1, Wm. A. Pinkney.

Heifer, junior—1, 2, Martin Boudreau.

Heifer calf, 6 mos. and over—1, Martin Boudreau.

Heifer calf, 6 mos. and under—1, 3, Henry Pitman; 2, Wm. A. Pinkney.

Guernseys (Reg.)

Bull, 3 years and up—1, H. W. Corning.

Bull, 2 years—1, D. S. Saunders; 2, W. L. Cook.

Bull, 1 year—1, H. W. Corning; 2, S. A. Cook; 3, Clyde Boyd.

Bull calf, 6 mos. and over—1, 2, Murray Crosby.

Bull calf, 6 mos. and under—1, H. W. Corning; 2, Emerson Servant; 3, Alf. Servant.

Cow 4 years and up—1, 2, 3, H. W. Corning.

Cow, 3 years—1, H. W. Corning; 2, Alfred Servant.

Heifer in milk, 2 years—1, Murray Crosby; 2, W. L. Cook.

Heifer dry, 2 years—1, 2, H. W. Corning.

Heifer senior—1, 2, 3, H. W. Corning.

Heifer, junior—1, 2, H. W. Corning; 3, Catherine A. Cook.

Heifer calf, 6 mos. and over—1, 2, H. W. Corning; 3, Alf. Servant.

Heifer calf, 6 mos. and under—1, 2, H. W. Corning; 3, H. H. Cook.

Champion bull, diploma—H. W. Corning.

Champion female, diploma—H. W. Corning.

Bull and 3 of his get, diploma—H. W. Corning.

Female and 2 of her offspring, diploma—H. W. Corning.

Guernseys (Grades)

Cow, 4 years and up—1, Jos. A. Ellis; 2, 3, Ross W. Durkee.

Cow, 3 years—1, W. L. Cook; 2, Geo. Churchill; 3, John Deveau, Jr.

Heifer, 2 years in milk—1, Guy W. Earle; 2, Murray Robinson.

Heifer 2 yrs, dry—1, Henry Pitman.

Heifer senior—1, Catherine A. Cook.

Heifer junior—1, Hartley Pitman; 2, Brownel Malone; 3, J. D. Burrill.

Heifer calf 6 mos. and over—1, 2, A. S. Fuller; 3, Clyde Boyd.

Heifer calf, 6 mos. and under—1, Cecil Murphy; 2, Warren Gridley.

Holsteins (Reg.)

Bull, 1 year—1, A. S. Fuller.

Cow, 4 years and up—1, 2, A. Corning.

Cow, 3 years—1, A. S. Fuller.

Heifer calf, 6 mos. and over—1, A. Corning.

Holsteins (Grades)

Cow 4 years and up—1, 2, Ross W. Durkee.

Heifer senior—1, 2, A. S. Fuller.

Herefords (Reg.)

Bull, 2 years—1, Jas. W. Trefry.

Bull calf, 6 mos. and over—1, 2, Geo. H. Burrill.

Bull calf, 6 mos. and under—1, A. S. Fuller; 2, Geo. H. Burrill.

Cow, 4 years—1, 2, Geo. H. Burrill.

Heifer senior—1, Geo. H. Burrill.

Heifer junior—1, Geo. H. Burrill.

Heifer calf, 6 mos. and under—1, Spencer Burrill.

Herefords (Grades)

Cow, 4 years—1, Arthur Spears.

Heifer junior—1, Spencer Burrill.

Polled Angus (Reg.)

Bull, 3 years and up—1, Wm. O. Porter.

Bull, 1 year—1, Wm. O. Porter.

Cow, 4 years and up—1, Wm. O. Porter.

Heifer calf—1, Wm. O. Porter.

Polled Angus (Grades)

Heifer, 2 years in milk—1, Wm. O. Porter.

Heifer senior—1, Wm. O. Porter; 2, Geo. W. Churchill.

Heifer junior—1, Wm. O. Porter.

Heifer calf—1, 2, Wm. O. Porter; 3, Perley Porter.

Champion Bull—1, Wm. O. Porter.

Champion female—1, Wm. O. Porter.

Bull and 3 of his get—1, Wm. O. Porter.

Female and 2 of her offspring—1, Wm. O. Porter.

Oxen, Steers, etc.

Yoke oven, 7 years and up—1, W. A. Killam; 2, Arthur Spears.

Yoke oxen, 6 years—1, Geo. I. Handy; 2, John C. Corning; 3. Geo. Churchill.

Yoke oxen, 5 years—1, Chas. L. Cann; 2, Edw. Cann; 3, Alvin Robbins.

Yoke oxen, 4 years—1, Murray McConnell; 2, D. S. Saunders; 3, Geo. W. Killam.

Steers, 3 years—1, Kenneth E. Perry; 2, Jos. A. Ellis.

Steer calves—1, Jos. A. Ellis, Jr.

Special prize, flag, D. S. Saunders.

Beef Cattle

Beef oxen, 4 years and up—1, Chas. Lyons; 2, D. S. Saunders.

Beef steers, 2 years—1, Edward Cann; 2, Guy W. Earle.

Beef steers, 1 year—1, J. Wilbur Earle.

Beef cow, 3 years and up—1, I. M. Lovitt; 2, W. A. Killam; 3, Harry Boyd.

SHEEP

Cotswold

Ram, 2 shears and over—1, Fred L. Rose.

Ram, lamb—1, 2, 3, Fred L. Rose.

Ewe, 2 shears and over—1, Fred L. Rose; 2, 3, Geo. Churchill.

Ewe, lamb—1, 2, 3, Fred L. Rose.

Shropshire

Ram, 2 shears and over—1, B. B. Killam.

Ram, lamb—1, 2, 3, John C. Corning.

Ewe, 2 shears and over—1, 2, 3, John C. Corning.

Ewe, shearling—1, 2, 3, John C. Corning.

Oxford Downs

Ram, 2 shears and over—1, Alvin W. Robbins.

Ram, shearling—1, Alvin W. Robbins.

Ewe, 2 shears and over—1, 2, Alvin W. Robbins.

Dorset

Ram, 2 shears and over—1, Alfred Servant; 2, Alvin W. Robbins.

Ram, shearling—1, Alf. Servant; 2, Alvin W. Robbins.

Ram, lamb—1, 2, Alf. Servant; 3, Vital White.

Ewe, 2 shears and over—1, 2, 3, Alfred Servant.

Ewe, shearling—1. 2, 3, Alfred Servant.

Ewe, lamb—1, 2, 3, Alfred Servant.

GRADES

Leicester ewe, 2 shears and over—1, 2, 3, Austin L. Robbins.

Leicester ewe, yearling—1, Austin L. Robbins.

Leicester, ewe lamb—1, 2, Austin L. Robbins.

Cotswold ewe. 2 shears and over—1, Fred L. Rose; 2, 3, Geo. Churchill.

Cotswold ewe lamb—1, Fred L. Rose.

Shropshire ewe, 2 shears and over—1, 2, 3, B. B. Killam.

Shropshire ewe yearling—1, 2, B. B. Killam; 3, Austin L. Robbins.

Shropshire ewe lamb—1, B. B. Killam; 2, 3, Austin L. Robbins.

South Down ewe, 2 shears and over—1, Mrs. Alvin Robbins; 2, Alvin Robbins.

Cheviot ewe, 2 shears and over—1, Vital White; 2, 3, Mrs. Alvin Robbins.

Cheviot, ewe yearling—1, Vital White.

Cheviot ewe lamb—1, 2, 3, Mrs. Alvin Robbins.

Any other breed, 2 shears and over—1, Alvin W. Robbins; 2, Geo. Churchill.

Dorsets—1, 2, Geo. Churchill.

Any other breed, ewe lamb—1, 2, 3, Mrs. Alvin Robbins.

(Continued on page 92)

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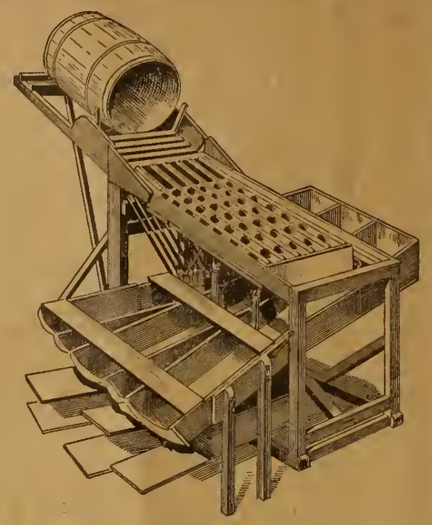

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HORTICULTURE

SUMMER PRUNING THE YOUNG APPLE ORCHARD

Shall we summer prune our apple orchards? The question of summer pruning is a perennial one, and one that is far from being settled as yet. The writer does not feel competent to express an opinion on the summer pruning of mature apple orchards, but with young trees there are many possibly to whom the results to date of the experimental pruning at the Vineland Station, may prove of interest and value.

The object of summer pruning is obviously to induce fruitfulness. Probably every fruit grower is familiar with the fact that fruit buds are formed the season previous to their expanding. It has been further determined that the fruit bud begins to differentiate from the leaf or branch bud early in July, the time, of course, varying with variety, weather conditions, etc. This also is about the time that wood growth slows up or stops on bearing trees, and naturally we associate these two facts together—that the energies of the tree are used up until that time in making the vegetative increase or growth, and afterward the energies go to the formation of fruit buds, and maturing the wood and fruit. The object of summer pruning, then, is to anticipate nature a little, and by the removal of unnecessary growth, and more particularly by the checking of terminal growth to divert more food into the formation of fruit buds than would ordinarily be the case. At the same time it is evident that summer pruning must be done late enough to avoid the stimulation of new growth. A large amount of wood should not be removed particularly if the pruning is done rather early, as such pruning will undoubtedly stimulate the development of secondary shoots, which may produce quite as much growth as the original shoot would have done. But if pruning is delayed until growth has practically ceased, and if it then consists mainly in taking out the growing tops of the leaders it ought to have a considerable influence towards fruit bearing. In other words, the part of the tree which was forming new leaves and new wood, and which was therefore using a large amount of plant food has been removed, and the tree can turn its whole energy into the development of strong fruit buds for next season's crop.

The apple orchard at the Experiment Station, in which the pruning work is being conducted, consists of 646 trees, including 170 trees of standard varieties: Hyslop, Spy, Greening, Baldwin, King, Hubbardston, Cranberry, Jonathan and McIntosh; and 476 trees of fillers, Dudley, Duchess, Wagener, Wealthy and Ontario. The orchard was planted in the spring of 1911 and the pruning experiment started in the spring of 1914. Three systems of pruning are being followed—winter pruning, summer pruning and little or no pruning.

Winter Pruning—These trees receive the usual treatment as practised in Ontario, being severely cut back and thinned out in March or April. The object is to form a framework that is pleasing to the eye, and at the same time will carry a maximum load of fruit without damage when the tree comes into bearing.

Summer Pruning—The trees are well thinned out in August and cut back only enough to keep the tree within bounds, which usually involves simply pinching out the terminal buds from the higher branches. The object is as much as possible to admit a maximum of sunlight, and air to develop as many fruit buds and the fruit spurs as possible, but at the same time not sacrifice the shape of the tree any more than is necessary. Early bearing is the object in view.

Little or No Pruning—These trees receive no pruning whatever except that a few cross and broken or otherwise injured limbs are removed. They are left as much alone as is conveniently possible.

Careful records are made of the size and vigor of the trees, blossoming dates, number of fruit spurs and fruit set, quantity of fruit harvested, and comparative size, color and keeping quality of the fruit.

RESULTS.

Table 1. Summary of Fruit produced 1916.

Method	No. of Trees	Total Weight of Fruit	Total Number of Fruits	Average Weight of Individual Fruits
Unpruned	207	3,260	14,416	.2261
Winter pruned	228	227	781	.2906
Summer pruned	209	1,820	7,169	.2538

As will be readily seen from a careful study of the above tables, the results to date are very uniform throughout. The summer pruned and unpruned trees were loaded with fine marketable fruit, both in 1915 and 1916, while the winter pruned trees, with the exception of two or three of the filler varieties, have borne practically no fruit. (In 1915, the winter pruned trees bore no fruit, the summer pruned trees 127.7 lbs., and the unpruned trees 209.4 lbs). There appears to be no doubt that summer pruning will bring the young orchard into profitable bearing much quicker than the plan usually followed of heading back severely each year. The unpruned trees, of course, have given similar results, but due to this lack of pruning the trees are not in as good condition for future bearing. They are more straggly, and have too many branches, thus not allowing of as free a circulation of air, or as much sunlight as is desirable for the control of insect pests and diseases and the production of the best quality of fruit.

Table II. Average diameter in inches of trunk of two standard and two filler varieties.

Variety.	Unpruned.	Winter Pruned	Summer Pruned
Wealthy...	2.267	1.967	2.130
Duchess...	2.093	1.703	1.942
Baldwin...	2.369	2.062	2.337
Greening...	2.489	2.052	2.393

The evidence presented in Table II is fully as marked as in the previous tabel, and is again strongly in favor of the Unpruned and Summer pruned trees. It is of interest also to note that the difference between Unpruned and Summer pruned is quite marked in the case of the earlier bearing, smaller growing varieties, Wealthy and Duchess, while in the case of the later bearing, larger growing varieties, Balding and Greenin, it is comparatively small.

The differences in the average diameters of the trunks in the three systems of pruning is, of course, correlated with differences in the general size and vigor of the trees. The Unpruned and Summer pruned trees are, in all cases, far larger than the Winter pruned trees.

It is possibly too early to draw any definite conclusions from the foregoing experiment as to the best time and method for pruning our young apple orchards, yet the results obtained are so striking as to merit more than ordinary attention and study. It should be noted that fourteen commercial varieties are included in the experiment, and the results to date have been in every case against out usual method of heavy winter pruning. (On account of space only four varieties are included in Table II). Little attempt is made in this article to account for the evidence obtained. It is simply given as it is and the reader left to draw his own conclusions.—By E. F. Palmer, Director, Horticultural Experiment Station.

PREVENT CAR SHORTAGE

All rail commodity tariffs effective September 1, 1917, provide for an increase in the carload minimum from 24,000 pounds to 30,000 pounds on apples. Class tariffs under which apples move from Nova Scotia points to points in Ontario and Quebec, remain unchanged, the minimum being 24,000 pounds.

There is a possibility that the increase on the western movement will centralize shipments in the larger centres and affect carload distribution throughout the smaller markets of Western Canada. Prevent this if you can by urging customers to continue to supply their local market with carload lots even under the increased minimum.

Te apple industry is called upon in this way to help conserve the car supply, but shippers must have the co-operation of the consignees. Many of the latter, even in large centres, insist upon a close adherence to minimum carload weights, the result being an economic waste which reduces the efficiency of the railways. Box packs will load quite easily in nearly all cars to the increased minimum, while in barrels the larger series of cars only can be loaded to and above the minimum.

Load and unload cars promptly.

Do not insist on having refrigerators if box cars will do.

Get shipments moving as early as possible.

To increase the average carloading of apples by one ton would be equivalent to placing 976 additional cars in service in Canada, and a car saved is a car gained.

Of course shippers cannot load more freight than is ordered, but as many cars will move to Ontario points from points in Nova Scotia under the 24,000 pounds minimum, we feel the shippers should exceed this minimum in every case, where possible under terms of sale, having due regard to the proper carriage of the fruit. If this is done the maximum use of every car is obtained, and it will go a long way towards solving transportation difficulties during the congested period.

G. E. McIntosh,
In Charge Fruit Transportation

BETTER APPLES

In packing apples, it is advisable to have them packed right so that when the purchaser of your apples opens the barrel or box, he will find them up to the standard of what they are marked. Satisfied customers are one of the best advertisements, as they buy more apples of the same brand, they tell their friends where they purchased the fruit, and advise them to buy from the same parties. The repeat orders are what count in business. It is much easier to sell to a satisfied customer than it is to have to hunt up new ones that are not familiar with the grade of your fruit.

We are situated near some of the best markets that use a large amount of apples. Let us awaken to the many splendid opportunities for orcharding that he have here in Maine, that

ought to be a good investment for the orchardist. Good care should be taken of the orchard. The trees should be cultivated, fertilized, pruned and sprayed. It has been my pleasure to visit quite a number of orchards that were receiving proper treatment, and the fruit looked fine.

Pruning to make an open headed tree is desirable, so that the sun and air can reach all parts of the top of the tree. Do not allow your fruit trees to overbear, as it may result in your fruit not growing to its normal size, but thin out, as the good-sized, highly-colored fruit brings the best prices.

If the trees are planted in rocky land, where it is impossible to plow, I would advise grubbing the land around the base of the trees and mulching. Where the tree is quite large, mulch for a good-sized space around the trunk.

The apple inspectors are now in the field, and the State Department of Agriculture is trying as far as possible to have a uniform pack, that will be acceptable to the trade and a credit to the state.—Maine Department of Agriculture, John A. Roberts, Commissioner, S. H. Eaton, Assistant Horticulturist.

FIGHTING APHIDS WITH FLIES

An interesting situation in international entomology has recently developed, with reference to the modern practice of introducing, from one country to another, an insect control of an insect pest. The spectacular success of the Australian lady-beetle against the fluted scale of citrus fruits in California; the slower, more complex but ecective work of imported parasitic and predaceous enemies against the browntail and gypsy moth in New England; and other experiments of this nature, varying in importance, are already matters of economic history.

Up to this time, few, if any, attempts have been made in this connection to distribute the syrphidae, a family of flies, (diptera), many of which are, in their larval stages, predaceous upon aphids. It has been well known, of course, that this habit is of real economic importance, but it has apparently been customary to relegate these flies to a position of second importance in this field of useful endeavor, and to confer first honors to the lady-beetles and parasitic hymenoptera.

Observations of some 10 or 12 years in Maine, however, indicated strongly that the syrphid larvae are, in that locality, the most efficient natural enemies of the aphids. In accordance, therefore, with the entomological policy of the Maine Agricultural Experiment Station to solicit the co-operation of specialists for problems of prime importance. Prof. C. L. Metcalf was invited to study the syrphidae of this state with particular reference to their larval habits.

Significant data were thus secured concerning which species of syrphids feed upon a given species of aphid. The publication, in bulletin form, of this and related information included the statement that a certain syrphid, pipiza pisticoides, plays in the vicinity of Orono a role of first importance as a natural enemy of the woolly aphid of the apple. The larvae feed so abundantly that the above ground colonies of this pest are well nigh exterminated by late summer.

Following upon this announcement a request came from Perth, Western Australia, for an importation of these flies in consideration of the fact that the woolly aphid is the most serious apple pest in that state. Accordingly, the Maine Agricultural Experiment Station has recently sent a shipment of pipiza pisticoides. Possibly other syrphids which accept the same diet may be sent later.

It is never safe to predict results in an experiment of this sort, but the indications are in favor of a successful outcome. In which case the exchange of international courtesies—apples in Australia for oranges in America through benefit by insects—is of scientific as well as agricultural interest.—Chas. D. Woods, Director Maine Experiment Station in Maine Farmer.

The Military *Service Act, 1917*

CANADA

DON'T DELAY !

Do It TO-DAY

THE MILITARY SERVICE ACT is passed; the Proclamation issued October 13th. It is now the bounden duty of every man in Class One to report for service or claim exemption. This includes all bachelors and widowers without children (not otherwise excepted) who were 20 years old on the 13th October, 1917, and whose 34th birthday did not occur before January 1st, 1917.

What To Do

Go to your Post Office and ask for the form for reporting for service or for claiming exemption The form contains clear instructions for filling in. Do this not later than NOVEMBER 10th.

Beware of the Last Minute Rush

With so many thousands of reports and claims to be dealt with, the rush of Class One Men will grow heavier day by day. You will waste less of your time and serve your own best interests if you avoid the inevitable rush on the last day.

The law is being enforced with the Government and the People firmly behind it. Obey the law. Do it today.

Issued by
The Military Service Council

SUPPOSED INJURY OF CROPS BY BEES

Beekeepers are often compelled to combat the idea that bees cause damage to fruit or other crops by sucking the nectar from the flower. This is not only untrue, but in many cases the bees are a great benefit in pollinating the flowers, making a good crop possible. A more frequent complaint is that bees puncture fruit and suck the juices. Bees never puncture sound fruit, but if the skin is broken by some other means bees will often suck the fruit dry. In doing it, however, they are sucking fruit which is already damaged. These and similar charges against the honey-bee are prompted by a lack of information concerning their activities. Bees may, of course, become a nuisance to others through their stinging propensities, but beekeepers should not be criticized for things which their bees do not do.

In most cases honey is produced as a by-product to general farming, and it is a good one. In addition to their worth as honey makers, bees are a valuable aid to the orchardist by aiding the setting of the fruit. To any of you who are beginners, I would say, go carefully, and do not expect to make a fortune in one year. Use the best strains of Italians; they are good workers, and easy to handle.—Wm. Couse, Streetsville, Ont.

DAIRYING.

A GREAT CANADIAN BRED AYRSHIRE

The first Ayrshire cow to claim a five years cumulative official test in the Canadian Record of Performance is "DAISY OF FERNDALE"—26735. Daisy is owned and was put through the test by W. C. Tully, Athelstan, Que., a young man that recently started in the Ayrshire business. Her tests have been made under ordinary conditions. She is a regular milking machine, and it is with difficulty that she is dried off each season,—in fact, for the past three years she has milked constantly. As a four year old she made her first record of 15,534 lbs. of milk and 590 lbs. of fat and still holds the record in that class. In the next lactation period of ten months she gave 14,530 lbs. milk and 521 lbs. fat. In her five years period she gave 71,247 lbs milk and 2725 lbs. fat. She is a large cow, of splendid Ayrshire type and excellent dairy form. Wm. Thompson of Athelstan, Que., was the breeder of Daisy. Her sire, "LORD RONALD OF FERNDALE"—26733, traces on the sires side to "COMRADE OF GARLAFF (Imp)—9183, by "BLOOD-FOR-EVER" of WYNHOLM and also to "NELLIE OSBORNE" (Imp)—5258, and to "LORD DUFFERIN"—1470 by Mars. His dam, "LADY MAUD OF MONTEITH"—7347, traces on the sires side to "CHIEFTAIN OF BARCHESKIE" (Imp)—5362, and directly to "NELLIE OSBORNE" (Imp) —5258, and on the dam's side to "LORD DUFFERIN"—1170. The dam of Daisy is also "LADY MAUD OF MONTEITH"—7347, the same dam as her sire. Thus there is strong line breeding, as three times she traces to "NELLIE OSBORNE" and twice to "LORD DUFFERIN" by Mars. All were strong strains which accounts for the persistent and heavy production of this cow.

AYRSHIRYES IN R. O. P.

From July 25th to Sept. 11th, inst. twenty Ayrshire cows and heifers registered in the Record of Performance test. Seven mature, one four-year old, five three-year-old and seven two-year-olds. There was nothing special in production. A good average was made in all the classes. "DAISY OF FERNDALE"—26735, owned by W. C. Tully, Athelstan, Que. head the list in the mature class with 11267 lbs. milk and 467 lbs. fat. Two others "SUNNYSIDE BLYTHE KATE"—36376, owned by Antoine Phaneuf, St. Antoine, Que., gave 10842 lbs. of milk and 415 lbs. fat and "LASSIE OF THE HIGHLAND"—21491, owned by W. C. Tully, gave 10,222 lbs. of milk and 429 lbs. fat. In the three-year-old class "AGGIE OF DARROCH"—44849, owned by Angus Armour, Dorchester, Ont. ,holds the highest record for milk with 9148 lbs. and 366 lbs. fat. "IDA OF THE GLEN"—39734, owned by Peter Vineau, Rollo Bay, P. E. I., gave 8266 lbs. milk but excelled "AGGIE" in fat with 383 lbs.

The highest in the two-year-old class was "APRIL BLOSSOM"—49757 owned by Robert H. Little, Campbellford, Ont., with 7619 lbs. milk and 306 lbs. fat.

The striking feature of this number was the high butter fat test, only three animals below 4% fat. Each animal in the test gave over 7000 lbs. milk but two and they being slightly under. Herein is where the Ayrshire cow excels, by giving a good flow of high testing milk.

W. F. STEPHEN, Sec.-Treas.

WAS IT THE COW'S FAULT?

Supposing that you keep a cow giving five thousand pounds of milk in a year, for which you receive seventy dollars cash, how much profit does that cow make? This is not a riddle, but simply a query that every dairyman should be in a position to answer. Leaving aside the "higher accounting" side of revenue and expenses per cow —those persistent items of rent, interest, taxes, depreciation, etc.—and taking only income from milk or fat, and cost of feed, are you then in a position to say definitely that each cow you keep does make a good clear profit above feed cost?

Whether the feed is valued at forty or eighty dollars, whether the income is fifty or one hundred and twenty dollars, is there such profit that a fair return is made to you for the labour expended. For if revenue and expense just balance, showing no margin of profit at all, there must surely be something wrong, your labour has to be paid for.

Milk and feed record forms may be had free on application to the Dairy Commissioner, Ottawa, so that the profit made by each cow my be ascertained. Perhaps some cows would show profit if fed better, some won't. Many men in all provinces on the cow testing register at Ottawa show thirty and sixty dollars clear profit per cow above feed cost. You may have made more than that: if you made less, was it entirely the cow's fault?

C. F. W.

HAS DAIRY COW SOME FINER POINTS TO BE DEVELOPED?

As I look back now from the vantage ground of fifty years, it almost seems to me that then it was not so much the quality of the cows we kept or the manner of their keeping that counted with the farmers of those days as it was the number. I remember the cows my father had. He was a good feeder and he took the best care of his stock that anybody in the neighborhood did. His cows were very carefully groomed each day. I can remember now how sleek they looked; every hair seemed to lie in the right direction. And he fed grain together with his hay. He liked to have his cows give a good mess of milk, and he wished the cream to be deep on the old-fashioned pans in which the milk was set.

But never was anything said about weighing the milk of the different cows; neither did the thought enter into the minds of any of us that there was a way of knowing just how rich was the milk given by any cow, aside from the gauge of thickness on the pan. All these things have come since. We did not stop to ask what breed a cow was. So long as she was a good looking cow, not too old, and gave a good mess of milk, that was enough to recommend her if she were in the market.

Now the question is, have we come to the best in estimating the worth of our cows? Fifty years ago we could have bought four cows, and perhaps five or six, for what we must now pay for one. The price of good cows at the present time is certainly encouraging—for the man who has them to sell. For the man who buys it seems often quite prohibitive. But are we at the zenith now? Have we the best cow today? Will we ever know higher prices than we do now? In short, are there any finer points to be attained in the dairy cow? If so, what are they?

I want to confine myself to that one phase of the subject now: Can we bring out any finer points in the cow of tomorrow? It is a question every breeder of fine stock is asking himself, for it does seem to be a fact that the better cows we have, the better we would like to have. The moment we come to a place where we are satisfied with present attainments, that moment we begin to slip backward. We have got to go forward; if we do not, a thousand things attack us to pull us down.

Better Masters, Better Cows.

It seems to me to be true that our best work for the future will be in the way of perfecting types we now have. If we have cows with superi-

Now Remember!

When I ask for cocoa I want the best — and everyone knows that the best is

COWAN'S COCOA "Perfection Brand"

It is a well-known fact that in every home where quality is appreciated, this delicious cocoa may be found. It is pure and wholesome and manufactured from the best cocoa beans procurable.

See that the boy brings it.

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariuess, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

Read My FREE Offer:

To Mothers of Daughters, I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten days trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS, Box 309 - - Windsor, Ontario

The Price of Turnips

is such that many farmers are going to buy Pulpers this fall

"YORK" Turnip Pulpers are used far and wide

They and the "SERVICE" line of Stoves and Utensils are made by

THE SMITH FOUNDRY CO., LTD.,

FREDERICTON, New Brunswick

Severe Headaches

CAUSED BY

SLUGGISH LIVER.

When the liver becomes sluggish and inactive the bowels become constipated, the tongue becomes coated, the breath bad, the stomach foul and then ensues headaches, heartburn, floating specks before the eyes, water brash, biliousness and all kinds of liver troubles.

Milburn's Laxa-Liver Pills will stimulate the sluggish liver, clean the foul-coated tongue, sweeten the sour stomach, and banish the disagreeable headaches.

Mrs. A. Shublery, Halifax, N.S., writes:—"I take pleasure in writing you concerning the great value I have received by using Milburn's Laxa-Liver Pills for a sluggish liver.

When my liver got bad I would have severe headaches, but after using a couple of vials of your pills, I have not been bothered any more."

Milburn's Laxa-Liver Pills are 25c. a vial at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

THE FIRST WEEK IN SEPTEMBER

Is the beginning of our busy season, but you can enter any time.

Send for new catalogue containing tuition rates and full information.

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Write for information as to our courses of study.

We must have a large number of graduates next year to supply the great demand for office help.

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or points, we cannot do better than to lay every possible stress upon developing those points until little or nothing remains to be done before we can say, "I have the most perfect cow in this particular the world ever saw." This will call for more careful, more accurate, more carefully considered work than we have been giving our business in the past. In other words, the day of loose, poorly digested work is done.

What is this but saying that from now on, the best work done in this field will be done in the man himself? It is the man who must be developed, and educated, and perfected. The cow which has a master whose life is carried on according to silpshod, careless, and haphazard plans will never have a cow with better points than he has now. To attain better results in our cows we must put more of ourselves into every particular of the work we are doing. If we are not willing to do this, we may as well abandon all idea of ever doing anything that will contribute to the advancement of the dairy farming of our day.

But is it worth while to place so much emphasis on a businesslike dairying? Is it a thing a man may be proud to bring out a cow with better points and more of them than any other man has done? Just this may be the answer: The man who does not think it worth the very best there is in him is not worthy to be engaged in the great enterprise of dairy farming. It is a thing to be proud of. We may all of us feel that when we are putting the very best there is in us into the minutest details of our work, we are contributing to the betterment of the world and our fellow men.

E. L. VINCENT.

Every Farm Should have an "Ayrshire"
She is a heavy milk producer, rich in butter fat—very prolific.
brings you Money
WRITE W. F. STEPHEN, Secretary
CANADIAN AYRSHIRE BREEDERS' ASSOCIATION
Box 504 HUNTINGDON, QUE.

Advertise in the Farmer

DOES IT PAY TO RAISE ALL HEIFERS FROM DAIRY HERD?

Economy, conservation and efficiency have no worse foe than the inefficient farm animal.

Animals are expensive producers of human food for the reason that they consume much more digestible nutrients in their food than they return in animal products. Even the very best animals return only a small percentage of the food value of the grain consumed in the form of food for man. For this reason in these times of high grain prices only the most efficient animals should be raised, if we are to maintain the proper balance between different needed food products and prices paid for them.

Some go as far as to say we should eliminate our animals almost entirely to secure the most efficient results. But those who make this statement fail to realize that from the crops raised in the ordinary rotation necessary for the best production of grain, less than one-half of the total digestible nutrients contained in all of these crops are available for the food of man. Therefore, the by-products from our different agricultural crops must be at least partially utilized in the feeding of farm animals, if we are to conserve to the best advantage and keep a proper balance of the food supply from our farms. To obtain the best results then, animals must be considered in our farming methods, or a large amount of the food value of our agricultural crops will be wasted. But, as the demand for human food becomes greater, it is increasingly important to feed these products to such animals as are capable of returning the largest possible percentage of the energy which these foods contain.

Since a certain amount of animal food is essential to the well-being and health of the people; as babies and invalids cannot be properly nourished on grain and vegetable food alone; and as the good dairy cow is the most economical producer of human food of any of our domestic animals, she is to be considered in the production of animal products at the present time, and is a vital factor in the country's food supply.

But the efficiency of the cow that is kept is of even greater importance under these conditions than in times past, and if there was ever a time since the world began when the production of every individual cow should be determined and not only the inefficient once but their offspring as well go to the shambles, it is now.

In a test recently conducted the poorest one-third of a certain number of cows produced an average of 3,654 pounds of milk and 134 pounds of butter fat annually, each cow lacking about $7 of paying for her keep. Like begets like, so wherein lies the wisdom of saving heifer calves from such cows as these, where a portion of the feed consumed only helps to augment the manure pile?

While grains have increased in price, the prices of dairy products have not kept pace with them in the same ratio, and why sell grain at $20 per ton to the dairy cow when the price at the elevator or the feed store is two or three times this amount, This is only a monetary consideration and takes no account of the actual loss of grain consumed. Why should anyone want to expend his time, energy and money in raising heifers from such poor cows, or even continue keeping cows which not only fail to pay for their keep, but lose money for their owner, besides wasting grain so much needed in these trying times. Yet it has been advocated that all heifers should be raised.

The essential thing in farming operations is balance. The man who keeps such cows as these and raises the heifer calves from them fails to balance his output with his income. In other words, he fails to compare the cost of grain, labor, time, etc., consumed in keeping an efficient cow with the income received from her dairy products.

Under past conditions there has been a tremendous waste of energy caused by keeping poor cows, and if there was ever a time this great waste should be stopped it is now. It would be the worst possible economy to raise the heifer calves from poor cows in these times of high grain prices and the dairymen who did so would simply be intensifying their chances for failure. Under ordinary conditions, it is certainly not wise to save the heifer calves from the losing half of the cows and, under present conditions, it is criminal to consider raising the heifer calves from anything but cows whose production is on the credit side of the balance sheet, and which will pay present market price for food, housing and labor and leave a profit besides.

Life is not always smooth, easy sailing and it is for our best development that it is so. Many of our troubles come fro mattempting to do what should not be done. A good part of our study in agriculture is an attempt to learn how to adapt our efforts to nature. The dairy farmer has one of these lessons strongly pointed out to him at present.

To keep the dairy herds replenished with future cows it is necessary to save the heifer calves from only the best of the cows and these are the ones, if of good parentage on the sire's side that will play their part in making a living for the milk producer and a better food supply for the world.

WILBER J. FRASER.

"My boy can run our ALPHA"
"There aren't many engines I'd trust him with, but the Alpha is so simple that I know he can't go wrong."
Isn't that the kind of engine you want around *your* place—an engine that is as steady and dependable as the best horse you've got?
The Alpha doesn't have to be "tuned up" every time you want to run it. It contains no electric batteries to weaken and give trouble—no complicated parts to get out of order. To start it you simply oil it, turn on the fuel and give the flywheel a pull.
You need a gas engine and it pays to buy a good one. There are definite reasons why the Alpha is best.
Alpha Gas Engines are made in eleven sizes, 2 to 28 H. P., and each size is furnished in stationary, semi-portable, or portable style, with hopper or tank-cooled cylinder.
THE DE LAVAL COMPANY, Ltd.
LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butterworkers. Catalogues of any of our lines mailed upon request.
MONTREAL PETERBORO WINNIPEG VANCOUVER
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

ABORTION STILL DEFIES THE VET.

Sir Stewart Stockman, of the British Board of Agriculture, declared recently that there is no cure for abortion. All the remedies on the market had been tested, he declared, and all had proved failures. The only preventive was inoculation. The eradication of the disease was impossible as a practical measure. Every aborting animal would need to be killed, and every in-contact animal in calf would need to be subjected to the serum test if she was affected. As a practical proposition the eradication of the disease may be dismissed, added Sir Stewart.

LIVE STOCK.

THE YOUNG BOAR NEEDS GOOD CARE, FEED AND EXERCISE

The treatment of the young boar that is intended to do serivce as a breeder, for the first two or three months, should be little, if anything, different from the one that is expected to cater to the bacon trade. In ither case the first object will be to build up a strong frame and a vigorous constitution. For this purpose at least, five essential factors will be necessary, namely wholesome food, pure water, pure air, vigorous exercise and comfortable quarters in which to feed and sleep. Since these are practically the same things that are needed to raise any domestic animals successfully, they will need to be mentioned here only as different kinds of animals and different ages need different treatment.

In common with other young pigs the boar should be liberally fed on foods that are easily digested and that contain a large percentage of protein or flesh-forming material. For this purpose no food will better form a part of the ration than milk, either whole or skimmed; but on account of the value of whole milk we will consider the latter only. One part of oil meal, two parts of shorts and four or five lbs. of milk to the pound of grain makes a very good feed for young growing pigs. When the pigs reach three or four months old, or sooner in some cases, the young boar should be separated from the sows, but it will be well to continue him with other male pigs for some time as more exercise will be taken under this treatment and also it will usually be desirable to use heavier and more fattening food at this time, with the litter, than will be desirable with the intended sire. Later on when the boar reaches a weight of one hundred to one hundred and fifty pounds the oil meal should be reduced in quantity and oats introduced into the ration which will produce a firmer flesh and muscle. At the same time all through the period of growth, it will be advisable to add a teaspoonful of bone meal with a pinch of salt to the ration or a mixture of one part salt, four of ashes and eight of charcoal placed in a box where it may be taken at will by the pig.

Again the necessity of pure water is emphasized. Water forms a very large percentage of the weight of carcass of any animal, and must be liberally supplied for good results. While the pig is prone to wallow about in mud during warm weather, at the same time he is subject to disease and parasitic trouble particularly that supplied in impure water. Hence this should be supplied in all the quantities that will be taken, in addition to any liquids that may be consumed in the food.

Pure air is as necessary for good health and strength of constitution as pure food or water. The best place to obtain this is out in a clean, fresh clover pasture, which, in addition to the benefits derived from pure air, also furnishes an opportunity to get from the clover and earth some of the natural ingredients necessary for best results, and still further, it affords an opportunity for the sun's rays to destroy many germs of disease, injurious to domestic animals. When kept in close pens, there should be good ventilation supplied to eliminate as far as possible the poisons accumulating from breathing and other bodily excretions.

Exercise is also promoted in the best possible manner when the pig is in the pasture lot and nothing is more conductive to its proper development than this. Exercise sets in motion all the organs of the body whose functions have to do with purifying the blood, firming the tissues, strengthening the nuscels and eliminating the waste products, thus giving to the whole body that buoyant health that makes for best results in any line of animal activity.

Again, in climates as severe as that of our Canadian winters, pigs must be properly sheltered no matter for what purpose they are intended. Exposure to cold storms, whether of rain, snow or wind uses up vital energy of a body at an amazing rate, which it will be quite impossible to replace by food or any kind of treatment. An animal in this condition will be of little service as a sire. Shelter is best provided in a roomy well ventialted pen with plenty of sunlight where a little hard grain roots and ensilage can be scattered amongst litter, both favoring exercise and digestion.

The age at which a young hog should be used as a breeder will depend considerably upon the growth and development he has made during the first fe wmonths of his life. Not too early, would be a good resolution; Ordinarily not before ten months and in many cases not until a year old is much better. The main thing is to have a proper development, of the system—not that a pig should have its full growth, as this will not be complete for two or three years but that all the bodily organs should be strong and active, when he may be used with reasonable expectations that good results will be accomplished. Even then the indiscriminate use of a young boar is a mistake. He should not be used too often or his growth and vitality will be interferred with. Nature, is opposed to excesses. Moderation must be practised or the law of equilibrium will be outraged, resulting in weakened constitution and general breakdown. This law will apply to all ages but particularly to young, immature animals. Judgment, reason and common sense are fine qualities to be used in connection with the management of the young boar and without which the results are likely to be very disappointing.—O. V. J.

THE HERD BULL THAT GRADES UP COMMON STOCK

It has been said that the average dairyman pays but little attention to the question of the herd bull, and that only the skillful breeder of any class of live stock realizes the importance of having a properly selected sire at the head of his herd. This proposition leaves out of consideration the great number of dairymen that are trying to get out of the average class and are attempting to build up good dairy herds. For these men the question of better producing stock is a vital one and many are beginning to realize that the building up of a profitable dairy herd must properly begin with the sire.

Improvement Through the Sire

The often heard statement that the sire is half the herd is not well appreciated by many dairymn. It is not unusual to hear the statement that so and so would not pay $25 for a registered bull calf of any of the dairy breeds. For these people a grade calf at $5 will grow into a bull and do the work just as well as a more expensive animal. Although this idea still holds in many dairy sections, dairymen are fast getting away from it and the days of the grade calf as the future herd bull are numbered. With a properly selected pure-bred sire used on a herd of common cows the improvement of the offspring over their dams will be rapid and before long it will be found that the sire not only tends

Prize Butter Makers Use

Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO., LIMITED 224

How the Standard Gets Practically All the Cream

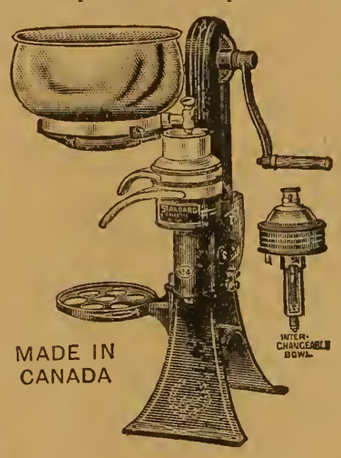
At the point where the good features of other machines leave off is the point where the Standard is just beginning to give you extra close-skimming, extra profit making advantages that open wide the eyes of everyone who cares to make comparisons. The Standard's bowl, the vital part of any separator, is unlike that of any other machine. It gets more butter-fat by far than others, and that is what counts! The

Standard

gets all but one-tenth pound of butter-fat from every 1000 pounds of milk skimmed while other machines lose a whole pound. Compare this record with that of your own or any other machine. And remember that this all-important result is proven over and over again by independent tests made at Government Dairy Schools. Here is the way the Standard out skims other machines:

First—The Standard has greatly improved the disc system. The Standard's discs are different in both size and shape and their advantages were proven by a two year test before being adapted.

Second—The Standard's exclusive curved wing centre-piece ensures perfect distribution and prevents clogging of the discs with cream. See in the picture the wide open space between the tubular shaft and the inside edges of the discs. Half of the skimming is done in that space, thus freeing the discs for perfect skimming.



MADE IN CANADA

Do You See Those Wings ?

The curve of the wings increases the distance over which the milk travels and the skimming force is multiplied many times. The curved wings distribute the milk in thin sheets equally to every disc space without clogging. There is no whipping as in the case with straight wings. That is why you can get firmer, better butter when you have the Standard to give you unbroken globules of butter-fat. And you get more of it—more prolts—because the Standard outskims all other machines.

Write for booklet describing the Standard's even spaced discs, the easy to clean and easy to turn advantages, the exclusive self-oiling system, the instantaneous clutch, the exclusive interchangeable capacity feature—many special advantages that put the Standard absolutely in a class by itself.

The Renfrew Machinery Co., Limited

Head Office and Works: RENFREW, ONT.

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Agencies Almost Everywhere in Canada

The Higher the Price of Butter the Greater Your Loss without the Best Cream Separator

BUTTER prices are going higher every week.

Even at present butter prices no cream producer can afford to be without a cream separator or to continue the use of an inferior or half-worn-out machine another day.

And the higher the price goes the greater your loss.

Even if you have only two or three cows a De Laval would pay for itself in a few months.

If you have a larger herd your need of the best cream separator you can buy is just so much more urgent.

A De Laval Separator bought now will more than save its cost by spring. It can be bought for cash, or if preferred, on such liberal terms that it will easily pay for itself in its actual savings over any other separator or creaming system.

See the nearest De Laval agent right away and let him show you what the De Laval will save for you. If you do not know the De Laval agent, write direct for any desired information.

The De Laval Company, Ltd.
MONTREAL PETERBORO
WINNIPEG VANCOUVER

NOTICE

The Annual Meeting of the Sussex & Studholm Agricultural Society will be held in the AGRICULTURAL SCHOOL, SUSSEX, ON MONDAY, NOVEMBER 12th AT 2.30 P. M.

A full meeting of members and prospective members is expected. All orders for fertilizers must be in the hands of the Secrtary not later than that date. Membership fee $1.25. Tell your neighbors.

M. A. MacLEOD,
Secretary.

to contribute half his characters to the progeny but often in the case of a prepotent sire more than half. The way in which pure-bred bulls transmit their characters to the offspring can be graphically shown by the following:

Generation.	Blood.	P. C. Improved.	P. C. Unimproved.
1	one-half	50	25
2	three-fourths	75	25
3	seven-eighths	87.5	12.5
4	15-16	94.75	6.25
5	31-32	96.87	3.12
6	63-64	98.43	1.56

This has possibly led to the saying that the sixth generation is practically pure and shows how to all intents and purposes that holds true. Grading up common stock in this way is the only sure way of obtaining a better producing herd. The same bull, of course, could not be used in any system of improvement, but animals of the same type, conformation and blood lines should be used. Whether grading up common stock or working with pure bred stock the breeder always has before him the well known principle that animals of the same form and characteristics tend to produce their own kind.

The Law that Like Produces Like.

The law that like begets like is the one on which all breeding operations to a large extent depend. This has been described as the corner stone on which is based the many lines of improvement as carried on by our present day breeders. When the parents are alike in breeding and other essential characters, the tendency for the progeny will be to show similar characters. Mating unlike parents tends to result in progeny differing in a varying degree from either parent, and applies to any of the characters, form, size, disposition or productive capacity. With the herd bull the tendency will be for his progeny to take on his characters or the characters of his immediate ancentry, modified, of course, by the possible indiscriminate breeding of the females in the herd. The law that like produces like has its limitations and is subject to many variations as every breeder knows, but the tendency for the offspring to be like their parents is certain and can be said to increase with the intensity of the breeding and the closeness of the relationship.

The Principle of Variations

The fact has often been noticed that the progeny of any cross may not be like the parents in many ways, be it form, size, quality or production. The progeny of a certain sire and dam may in one case result in an animal of good conformation and prduction, while the next result of the same cross may be entirely different. It smetimes happens that crossing one family within a breed upon another in the same breed results in outstanding animals, the reverse of this is also very often true. Such variations may be along the line of improvement and sometimes of regression. The causes of such variation may be from within or in many cases, external conditons, such as food, clmate, or care may have more or less to do with it. Since much of our stock has been bred along lines tending toward improvement, the desirable variations are segregated from the undesirable ones by the simple process of selecting the best. Methods of breeding as carried on by the best breeders tend toward the elimination of the undesirable characters and the keeping of the best.—R. E. Hundertmark, in American Exchange.

HANDLING THE DAIRY SIRE

While visiting some of the choicest herds of a particular breed of dairy cattle not long ago, one thing which impressed me was the difference in the way different men care for their bulls. For instance, on one farm I would find the head of the dairy in a stall that was simply perfect in its equipments; good air, plenty of light, and a kind keeper and caretaker. Needless to say that here I would see a bull that was making his mark on the quality of the calves of that breed in this country.

On another farm, and perhaps it might be only a few miles distant, I would find a man who kept his buli in a dark, poorly ventilated stable, where the floors were filthy and so little bedding furnished that the animal was compelled to lie on the bare floor, to the soiling of his fine skin and the humiliation of his spirit, for I cannot help believing that a well bred creature such as the head of a good herd ought to be, does have his sensitive feelings, and that he knows whether he is well treated or not.

PEERLESS PERFECTION
Horse High — Bull Strong — Pig Tight
It's made right—from high grade material. In the construction of our PEERLESS FENCING we use Open Hearth steel wire. By this process impurities are removed from the metal, thus eliminating one of the chief causes for the rapid rusting of fence wire. PEERLESS is guaranteed to give you satisfaction. Send for catalog. Agencies nearly everywhere. Agents wanted in open territory.
THE BANWELL-HOXIE WIRE FENCE COMPANY, Ltd.
Winnipeg, Man., Hamilton, Ont.

Some of the bulls I saw were not only shut up in such stables as I have described; they were fastened by the neck in rigid stanchions, with little chance to move around and no possibility of seeing much of the rest of the herd of which he was supposed to be the master. It stands to reason that a bul lstabled and cared for in that way cannot do or be at his best. The offspring will not be as apt to have the fine characteristics we have a right to expect from a thoroughbred bull as it would be if conditions were more favorable.

Now, well bred bulls cost something. We pay good money for them as a rule. We demand great things of them, and if they do not come up to our expectations we sometimes charge it to the animal, whereas, if we looked at the matter from the right angle, it is we ourselves who are responsible, through our lack of good management for the failure to produce the best results. The head of a dairy ought to be the gentleman of the farm stock. Not that he should be supported in idleness. Every bull should be given a chance to work a little every day. That is for his best good and really essential to the owner's success. But in so far as his good grooming, uperior quarters and general comfort are concerned he should be given the very best we have.

Connected with the stable in which the bull is kept there ought to be a yard with a high, stout fence, in which he may work off some of his surplus steam every single day. Storm or shine, he should be given this opportunity. If he is properly watched, he will be taken in before he gets chilled in cold weather and in summer he will be protected from excessive heat. If he gets wet, we should not leave him to dry off or shiver, but give him a thorough rubbing down with dry cloths. If he is really cold, blanket him, at first lightly, then more heavily, and finally again with a thin blanket, which may be removed when the last bit of moisture has been absorbed or dried up.

Then, too, the stall ought to be light and well ventilated. Good bedding ought to be on the floor, changed frequently. We would not expect the conditions to be perfectly sanitary otherwise. And the health of the sire is of prime importance. No ice cold water ought to be given him; the chill should be taken off in cold weather. It is not a great deal of trouble to do this and the returns are well worth the effort we make.

But if all these things have been provided and we are harsh and unkind with the sire upon which so much depends, we are running great risks. Now, I do not say that we should not always be on our guard against sudden vicious impulses on the part of the bull. Anybody who understands animals of this kind at all knows that it is best always to be on one's guard against attacks which may turn out disastrously. But I do say that it always pays to be kind with these creatures. Firmness is all right; a bull should be permitted to take no liberties, neither ought we to take liberties with him.

Nine times out of then, in my experience, when a bull develops ugly traits, somebody, sometime, has not done the right thing by him. The education of a bull is a matter of the highest possible importance. Beginning with the calf, straight up through, we ought to be patient, though self-controlled, kind while masterful. No boy should be permitted to fool with the bull calf. No dog ought ever to be allowed to worry him, whether young or old. All proper safeguards should be thrown about the handling of the bull, and still, there is no more perilous thing than ever to lose the temper and misuse the bull, no matter what the provocation. For you never can punish ugliness out of a bull. You only make matters worse by attempting to do it. To strike, prick or in any manner hurt such an animal only arouses the very worst instincts and adds fuel to the fire. The best way—the only way—to be sure of safety is to deal so fairly with the bull that he will not develop ugly characteristics.

In short, while a bull is a bull, he ought to be looked upon as the most valuable and highly prized animal on the farm. In no other way can we be sure of getting the best service from him.

THE HORSE

WEANING THE FOAL

How many farmers who own a mare and sucking colt ever stop to consider what the word "weaning" really means. The practice of the average farmer is plainly evident. He works the mother, sometimes not very judiciously and when he thinks the colt is old enough, he simply takes it away from her for good. But weaning means a gradual process, and it is a question of preparation more than anything else. Long before the final separation of mother and colt, the colt should be encouraged to eat a little grain, and ground oats is the best feed. It will begin to munch hay, grass or grain at three or four weeks of age and continue. This really commences the duty that will end in successful weaning.

Training the colt to lead and to drink a little skimmed or separated milk will help to retain the foal flesh, when the mother's milk is taken away. Never feed the colt milk from an unclean vessel. In addition to ground oats, a little oil meal is very beneficial, about half a pint a day. The effect of such a ration—sweet skimmed milk, ground oats and oil meal—on the growth and development of a foal is remarkable. and in all cases when the foal is likely to enter winter in low flesh, such a ration cannot be too highly recommended.

This business of feeding and training the young colt must be undertaken while the colt is still with the mother. The simplicity of the weaning process depends on the thoroughness of that preparation. If the foal has been accustomed to handling and feeding at this early age, the grain ration can be increased slightly as it grows. The process then becomes simple. for as the ration of ground oats and oil meal increases the amount of milk can be decreased. When the time arrives for complete separation, there will be very little if any set back or disturbance to either foal or mother. On the other hand, if the foal must learn to eat after it has been suddenly deprived of its mother's milk, it will take a long period of time to train it to take any substitute. Loss of flesh is the result, and the excitement displaces its nerve energy. Loss of appetite and impaired digestion begins the stunting of the foal, that ends in an undeveloped animal at mature age. The very best breeding is not able to contend with or surmount the evil influence of this practice. The weaning of the colt is therefore of primary importance to the success of the horse-breeding industry.

If the proper weaning of the colt is considered a bore and bother on the farm, horse breeding should be left alone. It is a special work and demands some time, and a farmer endowed with special tact of observation. Feed must be given liberally. Many colts are permanently injured the first six months after weaning by too scanty supply. The method to feed a colt before and after weaning can be learned by watching the youngster feeding when with its mother. It sucks often, and in small quantities at a time. The mother's udder holds no great supply at one time. The hand feeding of the colt must be done on the same principle, often and regular with small quantities at a time.

If the mother has been bred early after foaling, and proves in foal, it will be better to wean the foal early, and there is no way of doing this, with advantage to the young foal, than by the plan suggested of early preparation. Early weaning of the colt in this case gives the mare opportunity to regain her usual vigor and health and will aid in nourishing the young fetus.

If for any reason the mare or foal are not doing well, it is best to wean early. The mare will have a better chance to regain her normal condition, and the colt will be healthier if properly fed, than when sucking the dam that is in an unhealthy condition. If the mare is healthy, and is again in foal, but is not working, or is kept entirely for breeding, it is not at all necessary to wean the colt early. This is a natural condition, it is only when a mare has to work hard, and is in foal while she is nursing a young colt that weaning early must be resorted to, and early feeding a necessity.

When the mare and th colt have been separated, they should be kept separate; constant remembrances by sight, smell or hearing only prolong the period of unrest and loss of appetite. But don't put the little fellow away to the bush or rough pasture where colts, a year or two older, are pasturing. This practice is doing more damage to horse breeding than anything else, and it is all too common on Canadian farms. It is such a beginning that produces the spiritless, dejected, weak-stomached and short-lived horse.

The work mare will require some special care, when the colt is finally weaned. If she has been receiving additional rations to encourage the milk flow, they should be discontinued. Work the mare right along if she has been at work, but reduce the grain ration till she is dried off.

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Conserve time, money and your horse's strtngth by using
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They will enable your horse to travel on slippery, icy roads and streets in absolute safety. They can be adjusted in a few minutes and make you ready for the road any time—day or night—eliminating danger and delay.
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THE NEVERSLIP WORKS, 559 PIUS IX AVE., MONTREAL
U. S. Factory, New Brunswick

In drying off the mare, it is not necessary to milk her dry every time. When the udder becomes so full as to cause uneasiness, part of the milk should be drawn, but she should not be milked dry. If the milk is all withdrawn each time, it will take longer to dry her.

The mare and her little colt deserve more care and attention than is generally meted out to them. The brood mare that takes her allotted share of the labor on the farm, is the most intensely used animal on the farm. She is not naturally adapted to fulfil a full day's work, and nurse her colt properly at the same time. She carries no alrge receptacle, like the cow, to hold a large supply of milk, nor has the colt got the calf's stomach to hold it. The milk supply of the mare is almost continuous and the digestive organs of the little colt are so arranged that they can receive it only in the natural way, that of almost continuous sucking.

To meet this arrangement of nature some farmers allow their colts to follow their mothers all day at work, but this practice is not to be recommended. The colt is liable to meet with an accident through contact with implements, etc., and the over-exercise which the practice entails counterbalances any benefit that would otherwise come to the colt from the opportunity to suck as often as it chooses. Keeping the colt in while the dam is at work gives the owner the best chance to start the weaning operations. When the world returns to a normal condiiton, and for ten years after, the horse industry will command attention, and those today who are giving proper care and attention to the mare and colt on the farm, are those who will be winners in the race to meet the new demand.

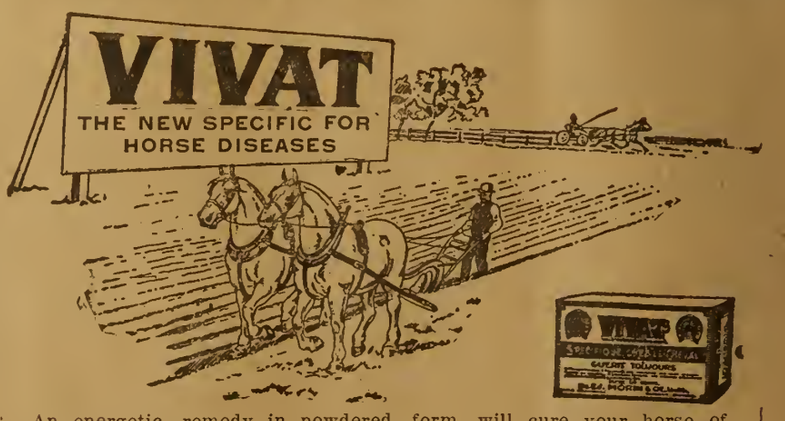
HORSE STABLE FLOOR OF BLOCKS OR CEMENT

Please let me know if for making a floor in a horse stable cedar blocks stood on end would be a good plan? What is the best way of putting them in? Would putting cement in first and sinking the blocks into it be a good plan? B. T. W.

Ans.—Cedar blocks in a dirt foundation would not make a good floor for a horse stable as the urine would soak init it and become unsanitary, and besides this the ground soon becomes soft and the floor will settle in places causing an uneven surface. The blocks on cement would be much better if the spaces between them were carefully filled up with a mixture of sand and cement and firmly pounded in and afterward a coat of hot coal tar poured over and swept into all parts to fill up the pores of the wood and stop absorption.

In any case the blocks should not be used for any part of the floor other than that where the horses stand. While they would last a long time they could not be laid smooth enough to clean off easily, hence would likely be neglected and be found more or less unsanitary.

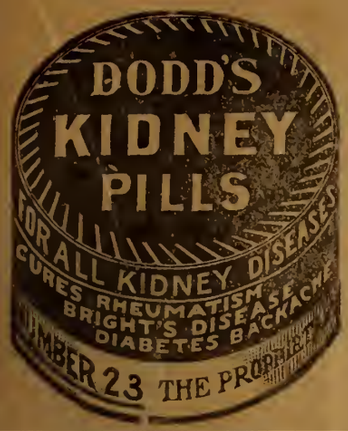
The modern way of putting down a horse stable floor is to lay the whole



An energetic remedy in powdered form, will cure your horse of COUGHS, HEAVES, COLICS, WORMS.
"VIVAT" also strengthens and gives endurance to DRAUGHT-HORSES as well as RACERS. Many prominent Veterinary Surgeons have tried it with success in critical cases—One 50c box is sufficient for six days' treatment.

FOR SALE BY ALL PROGRESSIVE MERCHANTS.

DR. ED. MORIN & CO., LIMITED, QUEBEC, CANADA.



surface with cement properly graded for keeping the urine in its place and then covering the stall part with plank. The cement will last indefinitely and the plank is easily laid and repaired when necessary. This makes a floor that is easily kept clean, is perfectly sanitary, and much preferable to the cedar block in every way.

HIDE-BOUND AND SCRATCHES IN MARE

(1) I have a young mare that is not in proper condition. I think her blood is out of order and her bowels do not act as they shuld. She is also hide bound.

(2) Will caustic stick be of any help in removing the lumps that follow scratches?

(3) Will camphor gum, dissolved in gasoline, give any more power to the motor,

Ans.—Hide bound is the effect, not the disease itself. The general ill-health of your mare may be due to indigestion, diseased teeth, exposure to cold in the winter time and starvation. A thin condition is usually an accompaniment of hide bound. Examine the teeath, as horses are often as much bothered with tooth troubles as are their human attendants. Give her a purgative consisting of 6 drachms Barbadoes aleos and one pint linseed oil mixed. Give a teaspoonful of salertus in soft feed, once a day for awhile.

(2) If proud flesh springs up in the cracks, burn it down with burnt alum.

(3) Camphor gum when placed in coal oil will give a brighter flame where coal oil is used in lamps, but we would not advise its application to gasoline as your question suggests.

HORSE IS LAME BY INTERFERING

I have a horse that is lame, caused by one foot hitting the fetlock joint. How should I treat it; the lameness has been for a long period now?

M. O. M.

Ans. You horse is interfering, and it may be caused by a variety of causes that make the horse brush the foot that is going forward against the other leg. Colts, before being shod, seldom or never interfere, but often do it as soon as shod. The shoeing is a common cause, the foot is often pared down too much on the inner side, tipping the fetlock in so as to bring it in the way of the other foot. Malformation is another cause, also leg weakness and thinness of flesh. The first thing you should do is to apply a boot or roll of leather strapped round the injured fetlock. Nicely fitting boots for all parts of the leg can be bought, and when once you have fitted one on, proceed to remove the cause. Take the horse to a shoer who is an artist at the business. As a rule no two feet are alike, and it requires an artist and a mechanic to change the position of the feet and legs relatively. A good rule to follow is to shoe so as to tip the fetlocks out, giving the feet roo mto pass without brushing. This is done by leaving the inner side strong and paring down the outer side, which will throw the centre of gravity in a new line and often prove successful. If the horse is overworked, thin and weak, give him a rest and a little better feeding. There is no plan much more effectual than to spread the legs with good solid flesh, making him travel wider.

HOME MEDICINE CHEST

Every home needs a medicine closet as there are likely to be many minor accidents and ailments in even a well conducted home. In the chest it is wise to keep only medicines that are needed in the common ills. If the medicine is not kept in a definite place it is often hard to locate in case of an emergency. Then, if there are children, the desire to know what is inside a bottle will sometimes cause illness or even death. A box measuring 10½x4½ inches will hold the necessary medicine and will keep the medicine away from childish hands. It is safe and wise to label every bottle.

The fololwing medicines should be found in every home medicine chest: Alcohol, used externally for strains, sprains and bruises; aromatic spirits of ammonia, a stimulant used in fainting when added to water; castor oil, a mild purge; powdered mustard, one teaspoonful in a glass of lukewarm water to cause vomiting, and in a plaster as a counter irritant; syrup of ginger, for cramps in the stomach; syrup of ipecac, used to cause vomiting and especially useful in cases of croup; carbolated vaseline; talcum powder; white castile soap; absorbent cotton (one-half pound); six gauze roller bandages; one roll adhesive plaster; collodion for slight injuries of the skin; pair of scissors; teaspoon; two bent glass drinking tubes; fountain syringe with glass points; cold cream or hand lotion for chapped hands; lip salve, equal parts of lanolin and vaseline.

National or world conservation can only be accomplished through individual conservation. Whether or not your circumstances make it necessary for you to conserve food products, the circumstances of the nation call upon everyone to conserve.

LOST APPETITE, POOR BLOOD

C.E. Sapper says Dr. Cassell's Tablets Best Tonic anyone can take for Weakness

Sapper A. Hartley, Canadian Engineers (home address, 906, Trafalgar-street, London, Ont.), says:—"I used Dr. Cassell's Tablets when I was in the South African War, and finding benefit have taken them since whenever I felt run-down. In my opinion they are the best tonic anyone can take for loss of appetite, poorness of the blood, and general weakness of the system. I never fail to recommend them, and mean to have some with me on active service."

A free sample of Dr. Cassell's Tablets will be sent to you on receipt of 5 cents for mailing and packing. Address: Harold F. Ritchie and Co., Ltd., 10, M'Caul-street, Toronto.

Dr. Cassell's Tablets are the supreme remedy for Dyspepsia, Kidney Troubles, Sleeplessness, Anaemia, Nervous ailments, and Nerve paralysis, and for weakness in children. Specially valuable for nursing mothers and during the critical periods of life. Price 50 cents per tube, six tubes for the price of five, from Druggists and Storekeepers throughout Canada. Don't waste you money on imitations; get the genuine Dr. Cassell's Tablets.

Proprietors, Dr. Cassell's Co., Ltd., Manchester, Eng.

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Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is an

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[NON-POISONOUS]

Does not blister or remove the hair and horse can be worked. Pleasant to use. $2.00 a bottle, delivered. Describe your case for special instructions and Book 5 K free. ABSORBINE, JR., antiseptic liniment for mankind reduces Strains, Painful, Knotted, Swollen Veins, Milk Leg, Gout. Concentrated—only a few drops required at an application. Price $1 per bottle at dealers or delivered.
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HAS IMITATORS BUT No COMPETITORS!

SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

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SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole bottle of any liniment or spavin mixture ever made Every bottle sold is warranted to give satisfaction Write for testimonials showing what the most prominent horsemen say of it. Price, $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard
VETERINARY REMEDY
Always Reliable.
Sure In Results.

None genuine without the signature of
The Lawrence-Williams Co.
Sole Importers & Proprietors for the U.S. & CANADA. CLEVELAND, O.

Finds Caustic Balsam to be Reliable.

I can say that I have for the past three years been a user of GOMBAULT'S CAUSTIC BALSAM, and have found it to be all that is claimed for it, and have in a great many instances recommended its use to others.—R. D. KIRK, Antigonish, N.S.

Canadians Appreciate Caustic Balsam

I have been selling GOMBAULTS CAUSTIC BALSAM for years, and it is giving my customers the best of satisfaction. I have also used it myself on different ailments with the best results. Too much cannot be said in its favor.—W. T. PRICE, Berkeley, Ont.

Sole Agents for the United States and Canada.
The Lawrence-Williams Co.
TORONTO, ONT. CLEVELAND, OHIO.

Had Chronic Indigestion Thought She Would Die

After Years of Suffering Attributes Cure to Dr. Chase's Kidney-Liver Pills.

Eating too much or using foods that do not agree are the usual causes of indigestion.

The trouble usually begins not in the stomach, but in the liver, since it devolves on this organ to filter the excess waste matter from the system.

Now, since Dr. Chase's Kidney-Liver Pills are the greatest of liver regulators, it naturally follows that they are unexcelled as a cure for chronic indigestion.

With the liver, kidneys and bowels active the poisonous waste matter is quickly removed from the system and there is nothing to interfere with the natural and healthful working of the organs of digestion. In this way only can lasting cure be effected.

Mrs. Rebecca Elliott, Magnetawan, Ont., writes:—"I feel it my duty to write you in regard to Dr. Chase's Kidney-Liver Pills. I had gastritis of the stomach for three years, and could get nothing to stop it until I tried Dr. Chase's Kidney-Liver Pills. I would have an attack of this trouble with my stomach every three or four weeks, and was so bad at times that my friends thought I would surely die. Thanks to these pills, I have not had an attack for six months, and believe that the cure is thorough. My husband has had very satisfactory experience with Dr. Chase's Nerve Food He was much run down, and very pale and weak. I persuaded him to use the Nerve Food, and after having taken five boxes he looks and feels real well."

It is such experiences as these that have made a place for Dr. Chase's medicines in the great majority of homes. They do not fail, even in the most complicated cases. Dr. Chase's Kidney-Liver Pills, one pill a dose, 25 cents a box. Dr. Chase's Nerve Food, 50 cents a box, 6 for $2.50. All dealers, or Edmanson, Bates & Co., Limited, Toronto.

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SKYLIGHTS & VENTILATORS
METALLIC ROOFING Co. LIMITED
TORONTO, CANADA.

POULTRY.

POULTRY DISEASES RESPONSIBLE FOR BIG NATIONAL LOSS

At least fifty per cent of the chickens, young ducks and turkeys and ten per cent of the adult birds die each year from diseases, many of which are preventable. This is an annual national loss of probably millions of dollars that could be avoided to a large extent.

War conditions mak it imperative that farmers and poultrymen, as far as possible, stop this enormous leak and in order to assist in this connection, Dr. Wickware suggests that every breeder pay strict attention to the general conditions of his flock in order that any ailing birds may be immediately isolated. When anything unusual is noted in a fowl, it is advisable to place the affected individual in separate quarters. If within a short time recovery does not take place it is unwise to destroy the fowl without first ascertaining the cause of the disorder. The prevalence of diseases is more often the cause of the poultry-keeper's failure than in the lack of practical knowledge. The extreme importance of keeping the quarters clean; isolation of all ailing fowls and immediate action in regard to finding out the cause cannot be too strongly impressed upon the poultryman.

When trouble occurs, forward to the Biological Laboratory, Central Experimental Farm, Ottawa, Ont., a live but sick fowl, or in the absence of such, a dead bird. In the interval, disinfect the quarters, runs, drinking fountains and feed dishes to check the spread of any infectious disease.

Disinfect the poultry houses by spraying the interior with a limewash solution (50 lbs. stone lime slaked in a barrel of water plus one gallon of a good commercial disinfectant.) Fill cracks and crevices to destroy mites, lice, etc. If a smaller amount is required it may be prepared by adding two and a half pounds of lime to a pail of water plus half a teacupful of disinfectant.

The Yards

Keep a crop growing in some part of the yards and alternate poultry and crops. If the runs are small, cover with a coating of air-slaked lime and dig up. If the runs are too large to dig, polugh and cultivate before sowing. Rape sown in the early part of the summer, after the breeding season, or early in September makes a good crop for this purpose. Rear all chicks on fresh soil.

Although these precautions may appear unnecessary, it is the only way of combating many disease conditions affecting poultry, which, if left to themselves will undoubtedly prove decidedly costly in the long run.

CUMBERLAND COUNTY POULTRY

It is some time since you have heard anything from Cumberland or the Cumberland County Poultry and Pet Stock Association. But we are still alive and hard at work trying to liven up the poultry industry of Cumberland, which has been particularly dead for many years. But we have succeeded in getting them started, and have obtained a car of Buckwheat Screening from the Government, which has proven a great draw card. The Assoc. are also taking up other feed questions in the interest of the members.

We are holding our first annual show Nov. 27th, 28th, and 29th, 1917, in the Curling Rink, Amherst, N. S. This building is an ideal place for a poultry show, and it has been obtained with rent and light free. As there is no Maritime Show this year the Cumberland County Poultrymen should make it an effort to come to Amherst on Nov. 27th, 28th, and 29th. As we are offering extra good prizes and a large list of specials. The entries close about November 10th, with the Secretary, V. G. Fuller, Amherst, and prize lists can be obtained free from him. Every one reports their birds in better shape than ever this year, and despite the high cost of feed, they have raised good size flocks.

Cumberland County is FORWARD to the front lines in poultry from now on, and we would advise other counties to look out, for when Cumberland starts anything it goes.

Cumberland County and
Greater Poultry.

HENS REQUIRE PROTEIN

For best egg yields hens need some animal protein supplement in connection with corn. Meat scrap and tankage may be used for this purpose.

Hens fed 1.6 pounds of meat scrap in a feeding test produced an average of 92 eggs in one year. Another lot given 11.6 pounds of meat scrap produced 141 eggs per hen in the same time. The extra feed costing 19 cents a hen returned a profit of 74 cents.

Tankage was a satisfactory substitute for meat scrap in the ration for laying hens in another test and reduced the cost of production. While hens fed meat scrap along with corn and bran laid 121 eggs per hen in one year, others fed tankage in place of meat scrap produced 22 eggs per hen at a slightly lower cost.

DON'T WASH EGGS

Except for immediate use or for local customers who use fresh eggs soon after delivery, never wash eggs even if soiled. Egg investigations show that over five million dozen eggs spoil unnecessary because they were washed or in ome way became wet before going into cold storage. Washing eggs dissolves and removes the natural gelatine covering which prevents germs of decay from getting through the pores of the egg shells.

Neither should eggs to be stored in water glass or other preservative be washed. If shells are badly soiled, better use the eggs for cooking purposes and spend the time needed for washing eggs in keeping the nesting material clean and providing clean dry litter in the laying rooms.

SELLING FEATHERS

There is usually a ready market for prime feathers that have had proper care and poultry raisers should not overlook the profits that may be made from this by-product. Feathers of ducks and geese are especially valuable, but sometimes even chicken feathers can be sold at a price well worth the trouble to save and care for them. Feathers should be picked when ripe, that is, all the animal matter should be out of the quill. At this stage they are easily plucked without damage or inconvenience and will not spoil or become motheaten It is advisable to separate the body feathers from those of the tail and wing, and assort them according to color. White feathers are particularly valuable.

They should be kept in a cool airy room, either in jute sacks which allow the free circulation of air among the feathers, or in open bins where they can be frequently forked over to keep them from matting.

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FEED COST OF PRODUCING EGGS

The cost of feed for producing eggs with pullets and yearling hens, both from Leghorns and from general purpose breeds, in the experiments on the United States Department of Agriculture farm, Beltsville, Md., during the past year, even with the high price of grains, has been considerably lower than the price received for nearby fresh eggs.

Leghorn pullets ate an average of 4.8 lbs. of feed in producing a dozen eggs. The feed costs on an average 12.9c per dozen eggs produced by the flock. The cost of feed per dozen eggs varied from 9.2c in July to 41.4c in November, when, during the moulting season, the flock continued to eat, but o fcourse produced fewest eggs. The number of pounds and the cost of the feed consumed per dozen eggs for each four-week period during the year were as follows, beginning Dec. 1: Pounds of feed: 5.3, 6.6, 5.4, 4.7, 3.3, 3.0, 3.0, 3.2, 4.9, 4.8, 8.6, 10.9, and 18.4; cost of feed: 12.0, 16.4, 13.7, 13.5, 10.3, 10, 10, 10, 9.2, 9.2, 16.8, 22.4, and 41.4c.

Leghorn yearling hens ate on an average 5.5 lbs. of feed per dozen eggs produced. The average cost of feed per dozen eggs produced by the flock was 14c. The cost of feed per dozen eggs varied from 7.3c in July to 266.3 ($2.663' in November (moulting period). The number of pounds and the cost of the feed consumed per dozen eggs produced by the flock for each four-week period beginning Dec. 1, were as follows: Pounds of feed: 20.3, 10, 5.8, 5.1, 3.6, 3.3, 3.3, 3.4, 3.9, 5.3, 7.1, 30.8, and 118.7; cost of feed: 45.9, 24.8, 14.7, 14.7, 11.1, 11, 11, 10.6, 7.3, 10.1, 13.9, 54.3, and 266.3c.

General Purpose Breeds.

The general purpose breeds ate considerably more feed than the Leghorns, the pullets consuming an average of 6.7 lbs. of feed, and the yearling hens 9.6 lbs. in the production of a dozen eggs. The feed cost averaged 16.75c per dozen eggs for the pullets, varying from 11.7 to 28.9c; and for the yearlings averaged 24.5c, ranging from 13.9 to 81.3c. The number of pounds and the cost of the feed consumed by the pullets in producing a dozen eggs for each four-week period beginning Nov. 1 were as follows: Pounds of feed: 10.9, 7.4, 10.9, 5.5, 5.8, 4.6, 4.4, 4.7, 4.7, 6.3, 6.9, 9.2, and 14.1; cost of feed: 24.4, 16.8, 27.1 14, 16.6, 14.3, 14.7, 15.6, 14.7, 11.7, 13.2, 17.9, and 28.9.

For the general purpose yearling hens the amounts per dozen eggs were as follows: Pounds of feed: 34.6, 32.9, 32.7, 12.6, 8.5, 5.7, 5.3, 6.1, 6.4, 7.5, 7.6, 10, and 21; cost of feed: 77.7, 74.5, 81.3, 32, 24.5, 17.7, 17.7, 20.3, 20, 13.9, 14.5, 19.5, and 43.1c.

The average cost of the mash and of the scratch mixture per 100 lbs. for each month, beginning in July, 1916, was as follows: Mash: $1.82, 1.85, 1.88, 2.02, 2.19, 2.24, 2.33, 2.42, 2.70, 2.96, 2.98, and 2.84; for scratch mixture: $1.90, 1.98, 2.03, 2.09, 2.30, 2.29, 2.64, 2.66, 3.05, 3.25, 3.68, and 3.41. The cost of the feed used in producing eggs can be figured from the amount of feed required to make a dozen eggs the year, or feed prices may be compared with those used in this work.

POWDER YOUR HENS BY MACHINERY

A hen may be healthy, well fed, and well housed, but if she is over run with lice and mites she cannot remain a profitable producer or a good mother for the young chicks.

Under ordinary conditions, lice and mites can be kept down by frequently spraying the poultry houses, roosts, dropping boards and nests and by providing a good dusting bath for the birds. When these precautions fail, individual treatment must be followed by dusting the birds with some good insect powder. In large flocks this is very laborious, and the following use of an old discarded churn may help to solve the problem.

Put a cupful or so of insect powder in the chorn. Next put in the birds one at a time and turn the churn gently for a half dozen revolutions.

PULVERIZED LIMESTONE
SWEETENS THE LAND AND PRODUCES HEAVY CROPS
The demand last season for our "Clairmont" Brand Pulverized Limestone was so heavy we were unable to fill a great many orders. We expect a very heavy business for 1918 and would advise all booking now and getting their supply early. Our Limestone is showing wonderful results.
—Manufactured by—
C. H. PETERS SONS, LTD., St. John, N.B.
Works at TORRYBURN, on C. G. R.

HAD TO GO TO BED KIDNEYS SO BAD

COULD NOT STAND STRAIGHT.

Women should not despair even if they are troubled with severe pains in the side or back, and not able to attend to their household duties.

The kidneys of course, are to blame nine times out of ten, but they can be promptly and permanently made healthy by the use of Doan's Kidney Pills.

Mrs. H. M. Jansen, Pathlow, Sask., writes:—"I feel it my duty to recommend Doan's Kidney Pills to anyone having weak kidneys, as they have been a great help to me. A month ago my kidneys were so bad that I had severe pains in my sides and back, and it was impossible for me to stand straight. I then got so bad I had to go to bed, and was that way for a week. We sent for some Doan's Kidney Pills, and I have taken just about one box, and now I am able to be up and do my own work. I am certainly grateful for the good they have done me."

To ensure getting Doan's Kidney Pills when you ask for them, see that they are put up in an oblong grey box with our trade mark of a "Maple Leaf" on the label.

Price 50c. per box at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

If the powder contains carbolic acid or some other strong irritant, it will be well to protect the birds eyes by slipping a small cloth sack over their heads.

The rotation of the churn causes the bird to relax and the feathers to open, thus letting the insect powder get well into the skin.—C. S. Anderson.

BLACK HEAD DISEASE AMONG THE TURKEYS

Blackhead in turkeys is caused by a parasite and is characterized by great sores in the caeca (blind intestines) and liver. This microscopic parasite causes irritations, destruction of the tissues, and nearly always the death of the affected turkeys.

The characteristic symptoms of the disease are as follows: The loss of appetite and tendency of affected birds to stand apart from the rest of the flock is common. When the intestines are severely affected the birds have diarrhea and the droppings are liquid and stained orange yellow; this is a characteristic symptom. Diseased birds are frequently found dead under the roosts.

The only sure means of diagnosis, however, is by post-mortem examination of a bird that has recently died. The bird should be cut open to expose the internal organs, and the liver and caeca examined. The presence of large sores in the substance of the liver and in the caecal walls is sufficient evidence for a diagnosis. The caecal sores may vary from a single point to large scabs covering nearly all the lining of both caeca. The liver is very much enlarged and the sores on it are two-fifths to three-fifths of an inch in diameter.

At the present time there is no known cure for this disease and the only means by which it can be con- On farms where an outbreak has octrolled is by preventive measures. curred, all the turkeys which have not come down with the disease should be marketed for meat and not sold for breeding. Nor should eggs from an infected flock be used for hatching. It would be well not to attempt to restock a farm with turkeys for several months, and not until a thorough disinfection of the premises has been made, by exposing the grounds to the hot summer sun and by the liberal use of freshly slaked lime in the poultry houses, roosting places and feeding pens. A fresh start may be made by hatching turkey eggs under hens, or by obtaining fresh breeding stock from a non-infected district. It is recommended that turkey raising be conducted on dry, sandy, well-drained lands, since blackhead seems to be prevented in large part by dryness of the surroundings.

TREATING FOR ROUP IN POULTRY-YARD

Can you tell me what disease our hens have and what to do for them? In the first stages of the disease the comb becomes pale and the eye, or sometimes both eyes, swell up and become very red. Inside the mouth at one side from the eye and ear pus forms in a little cavity which seems to lead down the throat. Then the swelling goes down a little and becomes less inflamed, while the eye becomes materated. The disease seems to be contagious.—G. H.

Your hens have the common disease called roup. Usually the comb turns dark and then pale, and probably with your hens this was the case, but you did not notice it. This disease is a contagious catarrh and the cankers in and about the mouth indicate that roup is of a diphtheritic nature.

The best treatment is prevention, and in order to stop the spread of infection all birds having the disease should be isolated, men and animals should not go from infected coop and yards to uninfected flocks, the yards and coops should be disinfected with a five per cent. carbolic acid solution or some good coal tar disinfectant, potassium permanganate of potash should be used in the drinking water and all dead birds should be burned or buried deep.

Local treatment helps sometimes, but if the bird is not a valuable one it usually does not pay. The painting of the diphtheritic patches with tincture of iodine will usually suffice. If false membranes reappear they may be burned out with a fifty to seventy-five per cent. hydrochloric acid. In using this, care should be taken to not touch unaffected parts.

Roup generally is caused by exposure to dampness and cold. Often it breaks out whenever such weather conditions prevail. Vigorous stock is better able to resist the disease than others and cleanliness in feeding and watering is a preventive measure.

Worth Protecting

A good article is worthy of a good package. A rich, strong, delicious tea like Red Rose is worth putting into a sealed package to keep it fresh and good.

A cheap, common tea is hardly worth taking care of and is usually sold in bulk.

Red Rose is always sold in the sealed package which keeps it good.

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PROVINCIAL PRODUCTION COMMITTEE WITH GOVERNMENT ASSISTANCE PLAN FOR 1918.

The Provincial Production Committee met in the office of the Secretary for Agriculture on Tuesday, October 23rd, with the Chairman, E. A. Schofield, presiding.

It was decided to entertain distribution of grain next spring and the Secretary for Agriculture was instructed to ascertain prices on the following minimum quantities: wheat, 300 bushels; buckwheat, 1000 bushels; barley, 1000 bushels and oats, 15,000 bushels.

The prospective scarcity of fertilizers was discussed at some length and quotations submitted by several firms were considered.

Mome mixed fertilizers were favored, but upon the advice of one of the members, who has had extensive experience in this work, it was decided to allow the purchasing of chemicals to stand over for a time. One quotation was for 1500 tons of a 3-6-5 mixture delivered at any station in New Brunswick, in car-load lots; fertilizer to be in 100 lb. bags or in barrels, the latter at a slight increase over the frmer. The potash is guaranteed water soluble. The Department is taking the necessary steps to ascertain the value of the guarantee and also to learn more about the source.

This committee, cooperating with the Department of Agriculture, wishes it made clear that this movement is strictly a war measure and is not for the purpose of interfering unduly with any existing business.

The fertilizer is now available, if an agreement can be made, and to ensure this supply of potash fertilizers is the motive.

Last spring the demand for fertilizers was greater than the supply and the prospects are that a similar condition, only more so, will exist next spring. If a demand for chemicals other than potash is manifested, no doubt the Department will seriously consider handling any that may be secured.

The above supply of 3-6-5 fertilizers, or any secured subsequently, will be sold on a cash basis or upon a bank settlement, where the purchasers arrange the necessary credit with their local bank. Delivery will be made upon advice of the bank manager. Nothing less than car-load lots will be sent to any point. All Agricultural Societies will be circularized immediately and they may order through their Secretary, and make the necessary arrangements at their local banks as organized bodies.

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For pulping and slicing

Light running and durable

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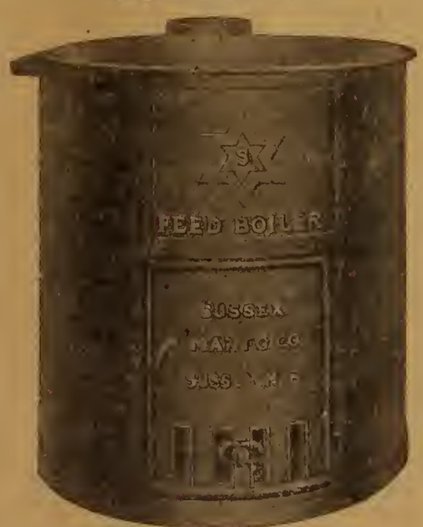

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Stove made of heavy sheet steel, made in 3 sizes, No. 30, 40, 50

Grinders

8 IN. REVERSIBLE PLATES

We are going cut of the Grinder business and have a few left which are being sold at a bargain price. Write us, it will pay you.

If you are in the market for any of the above articles, it will pay you to get our prices.

Remember we also manufacture the Sussex Little Giant Thresher and have a few second hand threshers on hand, which will be sold at a bargain. Sussex Wood Cutters are the best. Watch for our next add.

THE SUSSEX MANUFACTURING CO., Ltd., Sussex, N. B.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

WHEN YOU KNOW A FELLOW

When you get to know a fellow, know
his joys and know his cares,
When you've come to understand him
and the burdens that he bears;
When you've learned the fight he's
making and the troubles in his
way.
Then you find that he is different
than you thought him yesterday.
You find his faults are trivial and
there's not so much to blame,
In the brother that you jeered at
when you only knew his name.

You are quick to see the blemish in
the distant neighbor's style,
You can point to all his errors and
may sneer at him the while;
And your prejudices fatten and your
hates more violent grow
As you talk about the failures of the
man you used to know.
But when drawn a little closer, and
your hands and shoulders touch,
You find the traits you hated really
don't amount to much.

When you get to know a fellow, know
his every mood and whim,
You begin to find the texture of the
splendid side of him;
You begin to understand him, and you
cease to scoff and sneer,
For with understanding always pre-
judices disappear.
You begin to find his virtues and his
faults you cease to tell,
For you seldom hate a fellow when
you know him very well.

When next you start in sneering and
your phrases turn to blame,
Know more of him you censure than
his business and his name;
For its likely that acquaintance would
your prejudice dispel
And you'd really come to like him if
you knew him very well.
When you get to know a fellow and
you understand his ways,
Then his faults won't really matter,
for you'll find a lot to praise.

—Edgar Guest.

WRITING NOTES AND LETTERS OF ALL SORTS

The ability to write a graceful note or an interesting letter is an accomplishment of far more value to its possessor than most people imagine. We have to judge each other in this world more or less by appearances. A woman may have the usual amount of cultivation coupled with great natural refinement or the sweetest disposition under the sun, but if she writes awkward notes and slipshod letters, her friends will conclude that there is something lacking in her education; and a stranger receiving a communication of this sort cannot be blamed for putting her down as rather ill-bred when the exact opposite may be the case, and the whole trouble be caused simply by carelessness or lack of attention to details, which after all count for so much. For as the girl said, when chided for vanity of being told that beauty was only skin-deep, that she was not accustomed to seeing people without their skins; so, as regards social usages, particularly when pertaining to letter-writing, it is impossible to look into the hearts of our correspondents and discover their good intentions; we can only judge by the surface as it were, and a well or ill written note naturally raises or lowers the letter-writer in our estimation.

Correct Stationery.

Let us begin at the very beginning of the gentle art of writing notes and take up in the first place the note paper. Society is very particular in this respect and demands that paper of a good quality be used, either in white or cream, or at most in very dull blue or gray. But the white paper is considered in the very best taste. The surface may be either the smooth vellum finish or the rougher linen as preferred, but the quality must be good, not flimsy and cheap. Letter paper is so inexpensive nowadays that even the woman of very modest means should experience no difficulty in getting proper stationery. Never, under any circumstances, use ruled paper; this is intended only for little children, and should be discarded just as soon as one has learned to write properly. Square envelopes are always in good taste, and at present fashion sanctions the use of envelopes a little longer than they are square for friendly correspondence. It used to be the custom to have ciphers, crests, or monograms emblazoned in gay colors on the note paper, but at present these are little used and it is considered in better form to have simply the address of the city residence or the name of the country place printed, either in black or colors, about three-fourths of an inch from the top, either in the center of the sheet or at the right-hand corner. This is a very sensible and convenient custom, especially for the dwellers in large cities, where addresses are difficult to remember. A glance at the stationery at once shows the whereabouts of the correspondent.

When addressed paper is not used, and its uses, although most convenient and fashionable, is not at all obligatory, the address of the sender of the note or letter is generally written in the upper right-hand corner of the note paper and the date written from the left-hand corner of the last sheet at the end of the letter, directly after the signature.

Whether or not letters should be sealed with sealing-wax is simply a matter of personal preferance. Fashion sanctions the custom, but it is no longer considered necessary to fasten up one's letters in this way. Some people always do it, however, impressing a small monogram or crest into the hot wax. This is perfectly correct if one cares each time a note is written to take the trouble it entails, but most of us consider ourselves to do so.

Addressing the Envelopes

The first line of writing on the envelope should be the name of the person to whom the letter is addressed, always with his or her proper title as Mrs., Miss or Mr. Never write simple "Mary Smith", or "John Brown," but always "Miss Mary Smith," "Mr. John Brown." If the letter is written to a child it should be addressed "Miss Mary Smith", no matter what the age of the recipient, while "Master John Brown" is the proper superscription for a little boy. Beneath the name of the recipient on the envelope and a little to the right, comes the number of the house and name of the street writtn in one line, in the next line comes the name of town or city, and then the State. If the place is a small one it is best to write also the name of the county, either in a line by itself before the State or else in the extreme lower left-hand corner.

If it is necessary to put c|o (in care of) that should be written together with the name of the person to whose care the letter goes, either in a line below the name of the person to whom the letter is addressed or else in the lower left-hand corner.

The ink used in writing notes and letters should always be black. Our mothers used to use a pretty shade of violet ink, but this is no longer fashionable.

Composing the Note

Having acquired the correct stationery, the right sort of ink, and whatever kind of pen we prefer, let us now proceed to the busness in hand. In the first place, before writing a word, it is well to sit down for a few moments at your desk and quietly think out what you want to say, and then when you begin to write you will find that your ideas flow much more easily. It used to be considered necessary to leave a narrow margin on the left side of the note paper, but although this is a very good plan, and gives the correspondence a neat appearance, it is no longer imperative and many of the best-educated people write all over the paper. But there is one practice that never must be indulged in and that is to cross your writing; time is short and modern eyesight too precious to read communications crossed like a checkerboard.

The Salutation

The address to the person for whom the note is intended, or "salutation," as it is called, should begin half an inch below the address of the sender at the extreme left of the page. Society has decreed that the expression, "My dear" is a little more formal than simply "Dear." Thus if an accquaintance is written to, "My dear Mrs. Brown" should be the proper form, while if the intimacy is greater, "Dear Mrs. Brown" would be the way to address her. If it becomes necessary to write to an absolute stranger the full name shauld be first written on one line and directly under it, a little to the right, "Dear Madam", or "Dear Sir", as the case may be. Thus

Mrs. John M Br.own,
Dear Madam,"

would be the proper salutation.

Letters to tradespeople are generally written in the third person, something like this: "Mrs. John M. Brown, 16 Prospect Terrace, Glenville, New Jersey, would like Smith, Jones & Co. to send her immediately six bottles of their best salad oil by express. Enclosed find check for the amount."

It goes without saying that the spelling of all notes and letters should be absolutely correct. If you are a little dubious on this score—and some of our brightest people can never seem to learn to spell correctly—buy a small inexpensive dictionary and keep it in your desk, to consult whenever you are in doubt.

Whenever you start a new subject, begin a new paragraph. Be careful of your punctuation. Put periods at the end of your sentences—of course beginning each new sentence with a capital—and if the sentences are long or at all involved set off some of the dependent clauses with commas.

The Signature

A woman should sign her letters and notes cordially yours" or "Yours sincerely" when writing to friends and acquaintances; to relatives or very intimate friends she usually signs herself "Yours affectionately" or "Yours with love," or something of that sort. A man is generally "Sincerely yours" or "Faithfully yours." No one should ever sign her name with its title, Mrs. or Miss, unless it is put in brackets before the name, and even this is allowable only in writing to an absolute stranger, who otherwise might be puzzled how to address the reply.

Postage should never be inclosed for reply except in notes or letters that are strictly business communications, and then it must always be put in if a reply is requested. But in all social correspondence it is considered rather an insult to inclose return postage, as the expense is so slight that our friends are apt to resent having it sent to them.

The Proper Address

It is considered very bad form to address a wife by her husband's

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Careful Oversight Thorough Instruction

Large Playing Fields Excellent Situation

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Headmaster

Deafness

Perfect hearing is now being restored in every condition of deafness or defective hearing from causes such as Catarrhal Deafness, Relaxed or Sunken Drums, Thickened Drums, Roaring and Hissing Sounds, Perforated, Wholly or Partially Destroyed Drums, Discharge from Ears, etc.

Wilson Common-Sense Ear Drums

"Little Wireless Phones for the Ears" require no medicine but effectively replace what is lacking or defective in the natural ear drums. They are simple devices, which the wearer easily fits into the ears where they are invisible. Soft, safe and comfortable. Write *today* for our 168 page FREE book on DEAFNESS, giving you full particulars and testimonials.

WILSON EAR DRUM CO., Incorporated
252 Inter-Southern Bldg. LOUISVILLE, KY

MINARD'S "KING OF PAIN" LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

WHERE DO YOU BELONG?

You are a member of one or the other of these two groups. Either you have "arrived" or you are on your way toward success. There is a third group—the drifter. You do not belong to this class or you would not read this. We can help you to "arrive."

Moncton Business College,
Moncton, N. B.

It pays to attend an Accredited School.

125 Acre Equipped Farm Woman Must Sell

On main road, mail delivered and cream collected at door, near neighbors, school and church. 50 acres in dark loam tillage for hay, corn, grain and potatoes. 10-cow pasture and good woodlot. 8-room house, 10-cow barn; spring water in buildings. Aged woman's low price $1700 and if taken soon she will throw in horse, 2 cows, mower, horse rake, plow, harrow, wagon, engine, threshing machine, dry stove wood, hay, corn, potatoes and vegetables. Details to see it page 4 Strout's Catalogue of 321 bargains in a dozen states, copy mailed free. E. A. STROUT FARM AGENCY, Dept. 2612, 294 Washington St., Boston, Mass.

title; thus letters to the wife of a general should never be addressed, "Mrs. General Greene," but simply "Mrs. Greene," or "Mrs. James H. Greene." The titles, "General," "Judge", "Doctor," belong exclusively to the husband and not to the wife.

A man, on the other hand, should be addressed by his title if he has one as "Major-General Green," "Dr. Brown," etc., or failing a "handle to his name," as "Mr. George Robinson" or "George Robinson, Esq." In England this latter form is always used except in addressing tradespeople, but in America "Mr." is more often used and is regarded by many as the most sensible title.

Letters of Introduction

One of the most puzzling things to many people is to write letters of introduction. This is a task which falls more often to a man than to a woman, but there come times in the life of almost every woman when she would like to give such letters to intimate friends to present to her acquaintances in distant cities. She should then write a short note something like this:

Sunset, Colorado.

My dear Mrs. Blank:

This will introduce to you Miss Mabel Smith, an intimate friend of mine, who is about to visit New York for the first time and is consequently a stranger in the city. Any attention which you may extend to her will be gratefully appreciated by

Yours very cordially,
Mary Brown.

January 2, 1904.

Letters of introduction are never sealed by the person giving them, and if they are not business letters, but simply friendly letters like the foregoing, are rarely delivered in person, but sealed and sent by the recipient to the man or woman to whom they are addressed, together with the card of the recipient, on which is written her city address. And if you should receive such a letter of introduction from a friend, you must call without delay upon the person introduced to you by letter.

There is another kind of letter which, unfortunately, falls to the lot of most of us to write, and that is a letter of condolence. People with the warmest hearts and the very best intentions in the world often dread inexpressibly a duty of this sort, and, after putting it off until the last possible moment, turn out a stiff and stilted note that inadvertently wounds the sensibilities of those whom it is intended to comfort.

Letters of Condolence

A letter of condolence should be short and simple. In a few heartfelt words let your correspondent know how sorry you are for the great loss he has suffered. Don't harrow already overwrought feelings by too familiar allusions to the deceased. Such a letter should be sent shortly after the funeral has taken place. Letters of condolence are always answered either by the recipient or by some relative or friend who kindly undertakes the task for the grief-stricken one.

SAVINK STEPS IN THE KITCHEN

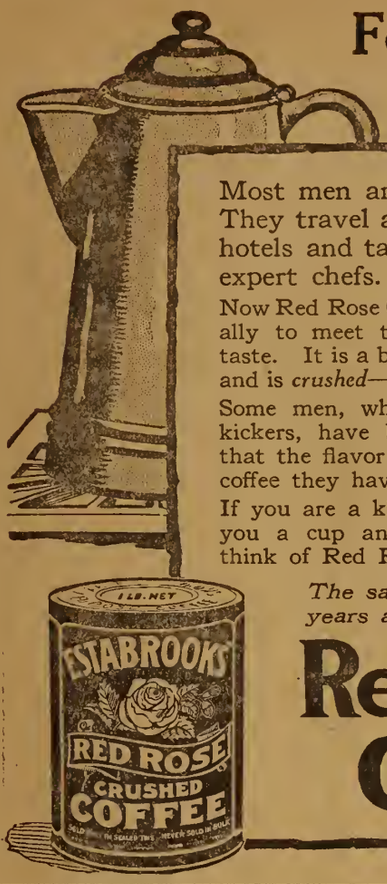
A well-planned kitchen saves time, and every woman is always on the lookout for ways and means of saving time and steps. She needs the extra time that a convenient kitchen will give her. She needs it for rest and recreation quite as much as for the performance of the countless other home and social duties that fall to her lot. A woman worn by much trudging in a mammoth, badly arranged kitchen, wearied by endless carrying of fuel and water, and fatigued by poor light and ventilation cannot expect to do her duty. She may wear herself out in the service of her family, but her duty—giving her best to her family—will not have been performed, because her "best" will have been expended in the hours of toil, and she will be too tired and worn to enjoy the family companionship which makes life worth living.

Think of the saving in steps and strength by even so simple a thing as a wood box beside the kitchen range, instead of running to the outdoor supply each time the fire is replenished. Women who have made their kitchens a convenient workshop may think it isn't possible that any kitchen is unprovided with a near-at-hand fuel supply, but, unfortunately such is the case. And then, just to go a bit further these hot days, there should be an oil or gasoline stove, and, further yet, a fireless cooker, to eliminate the heat of much necessary baking and brewing. Work in a cool kitchen is far different from work in a hot one.

A drain board on one or both sides of the sink is a great help. Here vegetables can be prepared or dishes washed without once having to cross the room. Drawers may be built beneath the sink or a cabinet arranged above to hold soap, scouring powder, brushes, towels, etc. The sink should have rounded corners, because such will not catch the dirt and are easy to keep clean.

There are not two housewives in a dozen who would arrange their cupboards alike, but all will agree that they should be roomy, convenient to both stove and sink, and of a height to suit the worker. All working utensils should be kept near the place where they are most used. Built-in cupboards above and below a work shelf or a kitchen cabinet (and the present-day cabinets are wonders in the completeness of their equipment) serve this very need by having handy pots and pans as well as provisions.

Of course the size of the kitchen depends upon its uses. A small kitchen, well lighted and well ventilated, is much to be desired if it is possible to have it. But even when it is necessary to use a large kitchen the equipment may be concentrated at one side so that there need not be useless tramping over a great space.



For a Kicker's Breakfast!

Most men are critical about coffee. They travel around among the best hotels and taste coffee prepared by expert chefs.

Now Red Rose Coffee was produced especially to meet the critic's keen, educated taste. It is a blend of the richest coffees, and is *crushed*—not ground.

Some men, whom we know to be real kickers, have been kind enough to say that the flavor is equal to that of any coffee they have ever tasted.

If you are a kicker, have your wife make you a cup and then tell us what you think of Red Rose Coffee.

The same price as it was three years ago. 674

Red Rose Coffee

BUTTER
cost cut in half

by using *more*

CROWN BRAND CORN SYRUP

At present prices it pays to eat less butter and more Crown Syrup.

In 2, 5, 10 and 20 pound tins, also "Perfect Seal" Quart Jars.

Write for free Cook Book.

THE CANADA STARCH CO. LIMITED,
MONTREAL. 15

THE NEGLECTED RURAL DISTRICT BURYING GROUND

It is quite common to hear criticism of the manner in which the country burying grounds are cared for, and a visit to these places often makes one feel that the criticism is indeed a just one. Neglect is pictured on every hand and even though these grounds are often well situated they are allowed to become a disgrace to the locality in which they are located.

Occasionally we find a cemetery that is well cared for and speaks well for the families having relatives in one of these silent cities, as they are often called. I wish to tell readers something of the plans we took to improve the cemetery in our locality. These grounds were at one time under the care of a religious denomination whose church building stood nearby. As time went on and many changes were made in the residents of the community, the building was no longer used for divine worship. The cemetery was the last resting place of many people who had lived near the church, and many who had lived at a distance. Many fathers and mothers had left the request that they be brought back from other places where they located, and buried in the old cemetery near their childhood home. Their children had laid them away carefully and lovingly and then returned to their distant homes. Thus these graves were left to the care of neighbors or distant relatives yet living in the community.

This cemetery did not suffer from what might be termed wilful neglect, but the nearest relatives being in other districts, and the farmers of the community being busy and expected to look after the graves of their own departed loved ones, did not give the attention needed to keep these graves in good condition. Some, too, who were buried there had no relatives anywhere to care for their graves. Many old-style, high-top grave markers were toppling over and some were already lying on the ground. Grass and weeds so completely covered the grounds that the use of a lawn mower was impossible.

There seemed to be only one solution of the problem and that was to place the care of these grounds upon a business basis. With this end in view, a meeting was called, a committee appointed and a board of trustees chosen. The board of trustees consisted of five members, and privilege given for the choosing of a new member as one trustee would go out of office or move away. This board consisted of public-spirited men who were willing to give some of their time gratis to the work of improving the old cemetery. The heavy labor, of course, was paid for, but much time was donated by these generous men. The first act of the board was to procure the names of all people interested in the work and those having relatives buried there. These people were solicited to give toward a fund that was to be put on interest and the income of this used in keeping up the cemetery. The fund itself was not to be used, only the income from it. No lots were sold, but it was understood that donations were welcomed, and by giving a donation to this fund, a lot would be reserved for the donor. All people solicited were favorable to this arrangement and many were very liberal in their donations. Those living at a distance were very willing to enter into a plan that would insure the care of graves of their relatives, and of their own graves when they were laid in the same resting place.

The cemetery was plotted and a careful record made of all lots, new fences were put up, the graves all levelled and low places filled, so that the grass could be mowed with a lawn mower. A man was hired to care for the cemetery, mow the grass and trim around trees and markers. The grass was mowed once each week. An ordinance was passed forbidding the planting of shrubs or flowers that would interfere with the mower's work. Cut flowers were allowable. In a short time we had a beautifully kept cemetery, plain but neat in every detail.

After all this work was done, a tent was purchased for use over the open grave during the time of burial in cold and rainy weather. This was much appreciated by those who buried their friends in this cemetery.

It is to be hoped that other communities take hold of similar work and help to remove the criticism that has been heaped upon the farmers who prmit a place to exist in their neighborhood that is a testimony of carelessness and neglect. The graves of our departed ones should be well cared for and kept in a neat, yet plain condition during the entire year.—Mrs. E. F. M.

With an attendance of 920,000 at the Canadian National Exhibition, and some 175,000 at Quebec, and judging from the interest which a large percentage of these visitors evinced in the Government Railways attractive exhibits, they may reasonably expect to enlarge their ever increasing clientele.

At Toronto an immense map of Canada from Winnipeg East to the Atlantic Coast, some sixty feet long by fifteen feet high, was erected. The route of the Government Railways was outlined in electrically lighted red globes, and in order to demonstrate the run of the principal trains a moving shadow by an ingenious electrical contrivance was arranged. For instance, starting from Quebec an illuminated sign flashed the "National Atlantic," and immediately the shadow commenced its run to Quebec, connecting at Cochrane with the line to Toronto, the names of the principal stations flashing as approached. Nearing Quebec another sign announced the Ocean Limited had left Montreal. The two lines connected at Quebec, and the Ocean Limited continued its journey by the shores of the St. Lawrence and thence to Moncton, Halifax and the Sydneys. On the return journey a similar operation was performed.

An announcement on the map stated that over 500,000 of our soldier lads had travelled this route without mishap, a feature in railway operation any transportation corporation might point to with pride—as indeed did a huge statue of Jack Canuck, emblematic of the fact that it was his own railway that had made such a record.

An architectural illuminated model of the new Union Station which is to be erected in connection with the vast terminals now under construction at Halifax was also displayed together with oil paintings showing the terminals as they will appear when completed.

The Quebec exhibit was on somewhat similar lines, and so impressed the Exhibition authorities that a gold medal was awarded for artistic taste in railway advertisements.

At both Exhibitions a large number of the railways publications were distributed.

A druggist can obtain an imitation of MINARD'S LINIMENT from a Toronto house at a very low price, and have it labeled his own product.

This greasy imitation is the poorest one we have yet seen of the many that every Tom, Dick and Harry has tried to introduce.

Ask for MINARD'S and you will get it.

WINTER TOURS

If you are contemplating a tour this season to California, New Orleans, Florida, or any of the numerous Southern Resorts, write J. H. Corcoran, T. P. A., G. T. R., Wyse Building, Moncton, for full information, rates, reservations, etc. Special fares are now in effect via Grand Trunk Railway System—stop over privileges are allowed.

Nothing to Brag Of

"Her ancestors came over in the Mayflower."

"Yes. Everybody travelled in the steerage then."

She—Why don't you call me "dear" nowadays?

He—And have Mr. Hoover warn me to find a substitute?

Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Address

Mrs. M. Summers
BOX 309 WINDSOR, Ontario

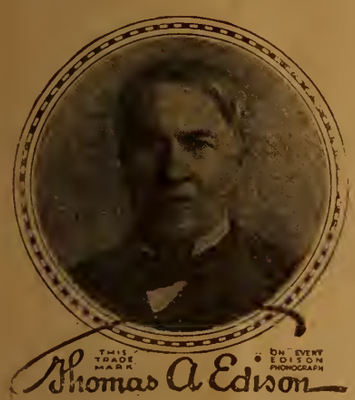
Try EDISON'S 1918 AMBEROLA in Your Home

NO matter how delightful your home may now be, Mr. Edison's New Diamond Amberola could not fail to make it more so. A Diamond Amberola in your living room would make it the brighest and cheeriest spot in the world for you. It would become a hallowed place where your family and friends would gather together and enjoy with you the gems of the world of music—heart-songs, ballads, hymns, opera, concert, musical comedy, vaudeville—no end of entertainment.

We could tell you that the Amberola reproduces songs so naturally that, when you turn your back and close your eyes, it is difficult to believe that the living artists are not actually in the room. We could write whole pages in an effort to convince you that the New Edison Diamond Amberola is a musical instrument indispensable in your home, but one note of the voice of Anna Case singing "Annie Laurie," or one ripple of music from the bow of Albert Spalding playing "My Old Kentucky Home," would convince you as no printed words ever could.

We could tell you that the New Edison Diamond Amberola has a GENUINE DIAMOND REPRODUCER (no needles to change.) We could tell you that Edison Blue Amberol Records are almost unbreakable and unwearable. We could tell you many other wonderful things about the New Edison Diamond Amberola and Edison Blue Amberol Records, but the Amberola itself can tell you in its own music language far better than we can.

HEAR MR. EDISON'S AMBEROLA BEFORE YOU PURCHASE ANY PHONOGRAPH OR TALKING MACHINE, WHATEVER NAME IT MIGHT HAVE. And when you do hear the Amberola, hear it in your own home right where you would expect to use it after you bought it. Just give it a few days' trial and it will sing and play itself into your heart and your life so that you will never want to part with it even at many times its cost.



SPECIAL FREE TRIAL OFFER

Now, about that tree trial? Find in the list below the name of the dealer nearest you. Fill in the coupon at the bottom of this page and sign your name and address on the margin. The dealer will send you the beautiful Amberola Book from which you may select the instrument you prefer. He will also send you the catalog of Blue Amberol Records. Select any 12 records. The dealer will send you the Amerola and records, which you may keep for three days. After three days you may purchase the Amberola and records for cash or on terms which will be arranged by the dealer, or you may notify the dealer that you do not care to purchase and he will take them back without the triai costing you one cent. No red tape! No expense or obligation on your part! Just an out-and-out FREE trial.

No doubt many times you have thought that you would buy, or, try a phonograph "some day." Send the coupon NOW. Make TO-DAY YOUR "SOME DAY."

Write for our beautiful Amberola Book, "A Master Product of a Master Mind." It's FREE.

WHAT THE AMBEROLA GIVES YOU

With the Edison Diamond Amberola you may have any kind of music at any time and any Place. Think what a priceless possession this is!

Mr. Edison has so perfected the art of phonographic recording that every sound-wave, from the crashing thunder of great military bands to the most delicate wisp of sound from the highest-toned violin, is caught by his recording instruments and reproduced on Blue Amberola Records. His method of recording is a secret with Mr. Edison and his most trvsted associates. That is why no record but an Edison record has all the natural warmth, richness and feeling of the living artist. There is no thin, metallic twang such as you hear from talking machines—nothing but smooth, round, rich and mellow melody. You actually would be astounded to think that anything but a human being could produce such music.

Mr. Edison, placing quality before all else, selects his artists solely on merit. He has the choice of the best vocalists and instrumentalists of the world make records for him. That is why, on Edison Blue Amerol Records, you hear the foremost singers, instrumentalists, bands, orchestras, etc., of the day. As iilustrating what you may have when you own an Amberola we have selected at random the following Blue Amberol Records from the extensive Blue Amberol catalog.

HEART SONGS
Annie Laurie
Ben Bolt
Jaunita
Kathleen Mavourneen
Last Rose of Summer
Old Folks at Home

SACRED SELECTIONS
Abide With Me
Beyond the Smiling and the Weeping
Crossing the Bar
Glory Song
I Love to Tell the Story
Dreams of Galilee

BALLADS
Only a Pansy Blossom
Silver Threads Among the Gold
I'll Take You Home Again, Kathleen
Take This Letter to My Mother
Only to See Her Face Again
When You and I Were Young, Maggie

BANDS
Sextette From Lucia
Al Captian and Mahattan Beach Marches
Cavalry Charge
Boston Commandry March
William Tell Overture
Laughing Eyes Intermazza
Garden of Roses Waltz
Passing Review—Patrol

PATRIOTIC RECORDS
God Save the King
God Bless the Prince of Wales
O! Canada
Soldiers of the King
Songs of England
Songs of Scotland

MARCHES
Dominion of Canada March
Boys of the Old Brigade March
Ben Hur Chariot Race March
Athol Highlanders' March
National Emblem March
Spirit of Independence March

MEDLEYS
Bonnie Scotland Medley
Medley of Country Dances
On Parade Medley
Fisher's Hornpipe Medley

INSTRUMENTAL SOLOS
Alexander's Ragtime Band (Banjo)
First Heart Throbs (Bells)
Dancing on the Housetop (Bells)
Carnival of Venice (Accordian)
Bonnie Scotland Medley with Variations (Xylophone)
Czardos (Harp)

VAUDEVILLE
Town Topics of Punkin Centre
My Uncle's Farm
Insect Powder Agent
Golden Wedding
Funny Doings at Sleepy Hollow
Mrs. Clancy's Boarding House

QUARTETES
Alone in the Deep
Don't Stop
Tramp! Tramp! Tramp!
Sally in Our Alley
When theRoll is Called UpYonder

RECORDS FOR DANCING
Around the Map—Fox Trot
Good-Bye Boys Medley Two-Step
Hezekiah—Cake Walk
Listen to This—One-Step
Over the Waves—Waltz
Whistling Rufus—One-Step
Virginia Reel
Underneath the Stars—Fox Trot

W. H. THORNE & CO., ST. JOHN, N. B.

EDISON DEALERS WHO GIVE FREE TRIALS

NEW BRUNSWICK
Corn Hill—A. D. Rouse
Edmunston—W. C. Albert
Fridericton—William Minto
Sussex—George Suffren & Son
Woodstock—A. E. Jones & Co.

NOVA SCOTIA
Bridgetown—C. B. Turner
Glace Bay Travis Bros.
Halifax—N.E. Phinney &Co., Ltd.
New Glasgow—Mason & McKay
J Ed. McDonald
Sydney—Travis Bros.

PRINCE EDWARD ISLAND
West Pubnico—L. T. E. Amirault
Summerside—Brace, McKay & Co.
Charlottetown—A. E. Toombs
Montague—Ellis Pharmacy

WRITE YOUR NAME AND ADDRESS IN MARGIN BELOW AND MAIL COUPON TO

W, H. THORNE & CO., ST. JOHN, N. B.

Please send me the Amberola Book and particulars about your FREE TRIAL offer on Edison Amberolas

Why Canada Must Give Credit to Great Britain

Great Britain is the Canadian farmer's best market to-day. Not only must the people of Britain be fed, but also the millions of fighting men, among whom are our own boys.

But Great Britain must buy all her supplies on credit. She can no longer send her money out of Great Britain. She must use her credit abroad and buy where she can get credit.

Canada in her own interest must give credit to Great Britain in order that Great Britain may be enabled to continue to purchase Canada's agricultural and other products.

In other words Canada must lend Great Britain the cash with which to pay Canadian farmers and other producers.

Then where does Canada get the cash? Outside financial markets are closed. Canada will get this cash by selling Canada's Victory Bonds.

So the Canadian farmer has a three-fold reason for buying Canada's Victory Bonds.

It is good business for him, because it keeps open his market.

It is patriotic because it enables him to help in maintaining production in Canada through which our fighting men will be supplied with Canadian produce.

And lastly because the investment is absolutely safe and the interest rate is most attractive.

Get ready to buy in November,
Canada's Victory Bonds

Issued by Canada's Victory Loan Committee
in co-operation with the Minister of Finance
of the Dominion of Canada.

VALUE OF FOODS TO THE BODY

Just how much food the human body does need is a complicated problem to which in recent years scientists have been devoting much attention. Food is the source from which the body derives both its energy, or fuel, and the substance it uses to build and replace wornout tissues. It also provides small amounts of recently discovered substances needed to regualte growth and other bodily functions. As a unit for measuring the energy supplied, scientists have adopted what is known as the calorie, and it is estimated that for a full-grown man engaged in moderate physical work, 3000 calories a day are needed. Of these, from 300 to 400 should be supplied in the form of protein, the chief substance utilized by the body in tissue building. There should also be some fruits and vegetables which supply the mineral matters needed for building tissues and help in various ways to keep the body machinery in good working order; also fat and starches and sugars, which are valuable sources of energy. The energy supplied by the foods, as a whole, is consumed by the body in running itself and performing its daily work.

The number of calories and the amounts of nutrients contained in stated quantities of different kinds of food have been worked out by scientists and afford a basis for comparing the nutritive value of various dishes. The matter is so complicated that the ordinary housewife probably has neither the time nor the inclination to make a mathematical calculation of the nourishment her meals afford. It will, however, help her to know that by observing a few fundamental principles she can alter her bills of fare to suit changing conditions at home or in the market without any risk of underfeeding the family. First among these is the fact that an adequate diet should contain articles from each of the five groups into which the common food materials may be divided. These are:

1. Vegetables and fruits, which supply acids and other substances that the body needs to keep it in proper working order, as well as some building materials and energy.
2. Meats, fish, eggs, milk, legumes, etc., in which the proportion of protein to other substances is high in comparison with the other groups.
3. Starchy foods, like potatoes, rice, flour and other grain products, etc., which furnish much energy and some protein and mineral matters.
4. Foods rich in sugar, an excellent source of body fuel, the pleasant flavor of which makes the diet more attractive.
5. Fats, like butter, bacon, cream, lard, etc., which are valuable sources of energy.

No one of the groups can profitably be omitted altogether. It is, nevertheless, possible to avoid from a nutritive point of view a useless waste of money by selecting, first, the cheapest articles in each group; and, second, by substituting to a certain extent articles from a cheaper group of those from a more expensive. In particular, the grain foods in group 3 may be used more extensively than is common in many households, and the use of the higher-priced ones in group 2 may be correspondingly decreased. The grains furnish protein as well as energy, and in a cheaper form than meat. By combining them with a little meat, the meat flavor is secured and a dish as nutritive but much less expensive than meat alone obtained. This does not mean that all animal foods or even all meats should be shut out of the diet entirely. As far as can be judged, in the light of our present knowledge, the body is most likely to keep in health if it obtains its protein from a variety of sources, including milk (especially in the case of children), eggs, meat, etc. Similarly, dried fruits contain not only the characteristic properties of foods in group 1, but sugar as well, and a liberal use of them will provide in an economical form much of the sugar which the palate craves.

The housewife, too, who understands these and similar facts in regard to the composition and uses of food will be able to free herself from many existing prejudices. Skim milk, for instance, is regarded as unfit for human use. As a matter of fact, it contains practically all of the constituents of whole milk, except the fat taken off in the cream. On farms it is frequently fed to live stock, but in many cases it might be more economical to use in the household. If it is considered too thin for drinking, it may be used in cooking, as in making soups, mixing bread, or cooking cereals.

HOUSEHOLD HINTS

When you wish to take up threads and ravelings with your sweeper dampen the brush and the task will be an easy one.

Stale walnut meats are improved by soaking in milk and water for eight hours; dry and they will be as fresh as new.

When covering jelly jars with wax, melt wax in a small teapot; by pouring it fro mthe spout the jars are quickly and neatly covered, and the wax stays melted for a longer length of time.

Before washing your sweater, sew up the buttonholes. This will prevent them from stretching open, as they invariably do in the process of cleaning.

The Pathé Sapphire Ball

versus

The Old Scratchy Needle

WHO to-day wants a talking machine equipped with a digging, scratchy needle that wears out your best records and necessitates the nuisance of ever changing needles. The Pathé genuine smooth polished Sapphire Ball never wears out, never requires changing. It reproduces the music in richer, more natural tones—for it completely fills the grooves of the record and gathers the music from a greater surface of contact, so that it does not lose the slightest shading or tonal effect.

Thus does this Pathé Sapphire Ball give you better music and more enjoyment from your instrument, as well as ensures longer life to your records Here's the Pathé guarantee :

"Every Pathé Record is guaranteed to play at least one thousand times without impairment to the unexcelled beauty of tone"

Pathephone

If you are planning to buy a phonograph, you should certainly hear the Pathé. You will be enchanted by its wonderful tone. If you already have a phonograph, it can be easily equipped to play Pathé Records—or — better still — any Pathé agent will make you a liberal allowance for it in exchange for one of the new Pathe Period Designs

Send for the PATHÉ CATALOGUE. It contains scientific explanation of exclusive Pathé methods of recording and reproducing sound, together with interesting chats on Period Furniture. Will be mailed free upon request.

THE PATHÉ FRERES PHONOGRAPH COMPANY OF CANADA, LIMITED

TORONTO :: CANADA

Maritime Province Wholesale Distributors: H.L. Hewson & Sons Ltd., Amherst, N.S. 2

Territory open for live agents. Progressive Merchants writing on their business letter head will receive a confidential booklet on the possibilities of a Pathe Agency.

CHOP FEEDS

(Continued from page 71

coarse and fibrous indicating that they had been largely made from light oats or contained a heavy admixture of oat hulls, mill waste and other worthelss offal. Some of them contained a number of weed seeds, fragments of straw, etc. There is no wonder that stock refused them. Indeed it is well nigh impossible to imagine how they could be used profitably, if purchased at any price.

Ground or crushed oats from good quality grain makes a nutritious feed —though for young pigs and calves the hulls should ve sifted out. While not a high-protein concentrate it possesses many excellent qualities as a basis of the meal portion of the ration. Of all the cereals, oats are the most readily and successfully grown throughout Canada, and there is no reason why the progressive farmer with foresight should not be independent of these purchased chop feeds. With a grain grinding mill on the farm, there should be little necessity to buy chop.

There are many excellent feeds on the market, the price of which is more or less in accord with their nutritive value. These should be bought, rather than chop-feeds, to supplement the home grown feeds and fodders. At the best, chop is but a low-grade feed. If necessity occasions the purchase of the chop, careful examination of the proffered feed is important; unless finely ground those containisg an exeess of hull can be readily distinguished by experienced farmer.

GOOD ADVICE

We all read with much interest and doubt about the wonderful things the city garden were going to do. We farmers of course were doubtful of the result. At the same time, we did not take any chances, and planted less vegetables. The consequence is, the great cry now is for vegetables. I advise farmers that have such vegetables, to get some fine sand now, before the rains come on, and get boxes and barrels ready to put such vegetables in; fill them full of vegetables when gathered, then pour in sand and shake down. In this way they will keep hard indefinitely and you can set your own price on them. If you have cabbages, strip oc loose leaves, roll in two thicknesses of newspaper and put in barrels if you have them; if not, put in bags and hang to ceiling of cellar. They will keep often into warm weather of next season.

If you have squashes or pumpkins, gather carefully so as not to dent; don't put in cellar; put in attic or dry room, not colder than 40. Do not allow them to touch each other. Squashes will keep way beyond next season, and pumpkins often into April or May. The main point is not to allow them to get too cold, or allow moisture to touch them. If they touch each other, they sweat and rot, or if the ooof leaks, it will rot them. The above is by actual experience, not theory. Some extra watery squash or pumpkins will not last as long as others. When they spot, I cut open and feed to hens. It is the best winter green food.—Clarence G. Penney in Maine Farmer.

ATTRACTIVENESS COUNTS

Selecting fruits and vegetables for exhibition at local, county, or state fairs has in many cases developed into the habit of selecting the largest specimens available. Size is always a desirable characteristic but the use of over-grown specimens often results in the sacrifice of other characteristics which are of equal or greater value.

In the search for size, good color and shape, freedom from blemishes and uniformity in the various specimens are often entirely overlooked. To show the relative value of these points, the score card for apples used by the University of Missouri College of Agriculture is given: Size, 15 points; form, 15; color, 20; uniformity, 20; freedom from blemish, 30; total, 100.

Size.—The most acceptable commercial size is somewhat above the average size for the variety in regions where it is well grown.

Form.—In all cases this refers to the normal gype of the variety, region of growth considered.

Color.—In red, blushed or striped pome fruits, high, celar color is desirable. A blush on a green or uncolored variety is considered neither favorably or otherwise. The highest color is most acceptable in stone and vine fruits.

Uniformity—This refers to uniformity in size, form and color. Uncolored, mis-shapen specimens or specimens of irregular size have no place in a plate of show fruit.

Freedom from b l e m i s h.—This means freedom from every kind of blemish, resulting from insect injury mechanical injury, disease or any other cause. Score cards for other fruits and for vegetables will necessarily differ somewhat from the foregoing but in every case, size will be only one of the several points emphasized. Therefore, in order to have exhibits which will carry away the ribbon it is necessary to select the individual specimens, well shaped and colored, of a uniform size above medium for the variety and free from all signs of injury or disease.

Memories

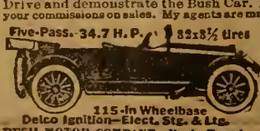
of "the nicest cup of tea I ever tasted"—

KING COLE ORANGE PEKOE

The "Extra" in Choice Tea

Driver Agents Wanted

Drive and demonstrate the Bush Car. Pay for it out of your commissions on sales. My agents are making money. Shipments are prompt. Bush Cars guaranteed or money back. 1918 models ready. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 11 Hf



BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

Meat Shortage Critical

Quick Action Needed

"Since the War the live stock herds in Europe have decreased by 115,000,000 head. No one can say to what extent the breach of the Italian front was made possible by food shortage. France requires increased supplies unless the women and children are to suffer from hunger. The Allies look to Canada and the United States to save the situation which to-day is grave. We must and will save it. The demand for meat and the fact of depletion of European herds is a guarantee of high prices. Steps have been taken to assure fair treatment to the producers.'

W. J. HANNA,
Food Controller of Canada.

Mr. Hanna is working in co-operation with the Food Controllers of Great Britain and the United States. He, more than any other man in Canada, knows the needs of the Allies. His statement shows the seriousness of the meat situation. The question is: How can the shortage best be met?

The speediest way to relieve the critical situation is to greatly increase the production of hogs.

Swine, on account of being prolific and growing to marketable size rapidly, will produce meat more quickly than any other kind of livestock, because 1,500 pounds of dressed meat is a moderate estimate of what can be produced from one sow in one year. As it is a huge quantity of meat that is needed, and needed speedily, the Allies look to the hog raisers of Canada and the United States to meet the situation.

The Dominion Department of Agriculture and the Agricultural Departments of the Provincial Governments are co-operating to secure the interest and action of the Canadian hog raisers. The Food Controller states that *steps have been taken to assure fair treatment to the producers.* This will be explained in a further advertisement. The point the Government wants to impress to-day is to

Save the Young Sows

Great Britain has almost doubled her imports of bacon and hams since the war, importing over one billion pounds since last year. There has been no increase in the production of Canadian hogs to meet this situation. The killings in Denmark have decreased 40%. The receipts of hogs at Stock Yards in the United States for the eight months ending August 31st, 1917, show a decrease of 2,765,006 compared with the same period in 1916, while the month of September, 1917 (the latest month for which figures are available) shows the great decrease of 859,830 compared with September of 1916. These figures emphasize the pressing need for a great increase in the production of hogs and indicate a safe and profitable market.

The enormous consumption of the Allied Armies is sufficient to steady and maintain the bacon market at a high level. The British Army ration calls for one-quarter of a pound of bacon per man per day. Multiply this by millions of fighters and some idea is given of the need for increased production.

The fighters, and the women and children of Britain, France and Italy urgently need more meat. Canada can help supply it. Save the young sows.

Dominion of Canada Department of Agriculture

LIVE STOCK BRANCH
OTTAWA

10

PRIZE WINNERS AT YARMOUTH EXHIBITION

(Continued from page 73

Fat wether or ewe—1, 2, Austin L. Robbins.

Pen of lambs—1, Alfred Servant; 2, Fred L. Rose; 3, John C. Corning.

SWINE

Berkshire boar, under 1 year—1, 2, Alfred Servant.

Berkshire boar, 1 year and over—1, Alfred Servant; 2, S. A. Cook.

Chester White boar, under 1 year—1, H. W. Corning. Over 1 year—1, H. W. Corning.

Chester White sow, for breeding, 1 year and over—1, 2, H. W. Corning. One year and under—1, 2, H. W. Corning.

Yorkshire sow, 1 year and over—1, 3, Wm. A. Churchill; 2, John C. Corning. One year and under,—1, 3, Wm. A. Churchill; 2, John C. Corning.

Berkshire sow, 1 year and over—1, Alfred Servant; 2, John C. Corning. One year and under, 1, Wm. O. Porter; 2, Emerson Servant.

Grade sow, any breed, over 1 year—1, Jas. Earle; 2, 3, S. A. Cook.

Grade sow any breed, under one year—1, Alfred Servant; 2, B. B. Killam; 3, Hartley Pitman.

Barrow or sow for slaughtering—1, Wm. O. Porter; 2, Wilbur Porter.

Spring pig—1, John W. Meisner; 2, John F. Deveau; 3, Cann Bros.

Litter sucking pigs—1, Wm. A. Churchill; 2, B. B. Killam; 3, John C. Corning.

Wins Bankers Prize Bacon Pig—Hartley Pitman.

POULTRY

Light Brahma hen—1, 2, 3, Fred L. Rose.

Barred Plymouth Rock, cock—1, Percy Carey. Hen—1, 2, Percy Carey.

White Plymouth Rock, cock—1, Gilbert Allen. Hen—1, 2, 3, Gilbert Allen.

Silver Wyandottes, cock—Harvey Allen. Hen—1, 2, 3, Harvey Allen.

Buff Wyandottes, cock—1, 2, Wm. Beazley, Halifax. Hen—1, 2, Wm. Beazley, Halifax.

White Wyandotte, cock—1, John W. Bain; 2, O. K. Milestone; 3, Victor Cushing. Hen—1, 2, Geo. Patten; 3, John W. Bain.

Partridge Wyandotte, cock—1, Wm. Beazley. Hen—1, 2, Wm. Beazley.

White Leghorn, hen—1, 2, 3, Gilbert Allen.

Hamburg, cock—Vernon Allen. Hen—1, 2, 3, Vernon Allen.

Silver Spangled Hamburg, cock—1, Vernon Allen. Hen—1, 2, 3, Vernon Allen.

Houdans, cock—1, Vernon Allen. Hen—1, 2, 3, Vernon Allen.

Black Orpington, hen—1, Laurimer McKenna.

Buff Cochin Bantam cock—1, Francelia Foulis; 2, Allan D. Foulis. Hen 1, Ethel Handy; 2, Francelia Foulis; 3, Allan D. Foulis.

Bantam, any other variety, cock—1, Dorothy Clarke; 2, Lorimer McKenna. Hen, 1, Lorimer McKenna.

Rhode Island Red, s. c. cock—1, Perley Porter. Hen—1, Perley Porter.

Rhode Island Red, r. c. cock—1, Allan D. Foulis. Hen—1, Allan D. Foulis.

Silver Campine, cock—1, H. C. Burrill. Hen—1, 2, H. C. Burrill; 3, Miss J. M. Godfrey.

Golden Campine, cock—1, Stanley Ross. Hen—1, 2, Stanley Ross.

Ancona hen—1, 2, 3, Lyman Koritem.

Red Sussex, hen—1, 2, Percy Carey.

Breeding pen—1, Mrs. Geo. H. Burrill; 2, Harvey Allen.

Utility breeding pen—1, Percy Carey.

Pen fat chickens—1, Mrs. W. O. Porter; 2, Victor Seary; 3, Percy Carey.

Chickens

Barred Plymouth Rock, cockerel—1, 2, Percy Carey; 3, O. K. Milestone. Pullet—1, 2, 3, Percy Carey.

White Plymouth Rock, cockerel—1, 2, 3, Gilbert Allen. Pullet—1, 2, 3, Gilbert Allen.

Golden Wyandotte, cockerel—1, Mrs. Geo. K. VanHorne.

Buff Wyandottes, cockerel—1, W. Beazley, Halifax. Pullet—1, 2, Wm. Beazley, Halifax.

White Wyandottes, cockerel—1, John W. Bain; 2, Dorothy Clarke; 3, Raymond Butler. Pullet—1, Victor Cushing; 2, Dorothy Clarke; 3, John W. Bain.

White Leghorns, pullet—1, 2, 3, C. E. Langille.

Silver Spangled Hamburgs, cockerel—1, 2, Vernon Allen; 3, Mrs. Geo. K. VanHorne. Pullet—1, 3, Vernon Allen; 2, Mrs. Geo. K. VanHorne.

Houdan, cockerel—1, 2, 3, Vernon Allen. Pullet—1, 2, 3, Vernon Allen.

Black Orpington, pullet—1, Lorimer McKenna.

Buff Cochin Bantam, cockerel—1, Allan D. Foulis. Pullet—1, 2, Allan D. Foulis.

Rhode Island Red, s. c. cockerel—1, Victor P. Seary; 2, 3, Perley Porter. Pullet—1, Victor Seary; 2, 3, Perley Porter.

Rhode Island Red, r. c. cockerel—1, Allan D. Foulis; 2, Perley Porter. Pullet—1, Allan D. Foulis.

Silver Campines, cockerel—1, 2, 3, H. C. Burrill. Pullet—1, 2, 3, H. C. Burrill.

Golden Campines cockerel—1, Stanley Ross. Pullet—1, Stanley Ross.

Red Sussex pullet—1, 2, 3, Perley Carey.

GEESE

Toulouse Geese, 1 year and over—1, Geo. Churchill; 2, Wm. O. Porter; 3, Perley Porter. Under 1 year—1, Perley Porter; 2, Wm. O. Porter.

Embden geese, 1 year and over—1, Gordon T. Lewis; 2, Alice Churchill; 3, Frank Cushing. Under one year—1, Gordon T. Lewis.

DUCKS

Pekin Ducks, 1 year and over—1, Francelia Foulis; 2, Perley Porter; 3, Victor Cushing. Under 1 year—1, Fred Pitman; 2, Henry Pitman; 2, Hartley Pitman.

Rouen Ducks, 1 year and over—1, E. R. Pinkney; 2, Mrs. Frank Cushing.

Pigeons—1, Robert Grant.

Rabbits—1, W. N. Allan; 2, Raymond Butler.

Belgian Hares—1, 2, Raymond Butler.

Wouldn't You Like This Coat

Charming Hudson Seal Coat—Latest Style—Best Quality

Who has not longed for a Hudson Seal Coat? We illustrate a wonderful Hudson Seal Coat here. It is made in the full box style from shoulder to extra full ripple skirt. The coat has a neat, deep crush collar and cuffs of fine quality black lynx. Only the very best Hudson Seal Skins were used for making this coat. Rich pussy willow or brocaded silks are used for the linings. Length of this coat is 44 inches. This is a sumptuous coat. You will be delighted with its appearance. Order by mail. Mention the number of the coat—418. Price only..... $260

A Dominion-Wide Mail Order Service

Our service covers Canada. From east to west of the Dominion we have hundreds of customers who have benefitted by the matchless fur bargains. Wherever you live, if you want furs of beauty and quality at low prices you should buy from us. The nearest mail box links you up with Canada's greatest fur house. Our stock includes hundreds of values like those featured here. A free copy of our catalog will be sent on request.

Fur Bargains for Everybody In Canada

Study This List of Suggestions Carefully — Select What You Want and Order At Once:

"Satisfaction or Money Refunded"

Read Our Guarantee

If, on receipt, you find that the furs for any reason are not satisfactory, write your name and address on the outside of the package and return them in ten days in good condition, stating why the goods are returned, and we will pay the transportation charges both ways and exchange or refund the money in full. All that we ask is that before you ship the article you notify us. We make no exception with any goods. Our policy is to give you complete satisfaction. Therefore, we do not wish you to keep any article that will be in any way unsatisfactory to you.

No. 435—Here is a snap in a Persian Lamb Coat. This coat is made from best quality glossy even curl Persian Lamb skins and has a deep cape collar and cuffs of best quality full-furred Alaska Sable; a slightly fitted waist line and extra full ripple skirt; silk crochet buttons. The best silk linings are used. Coat is 45 inches long. Price to you wherever you live $385

A Fur Set For Your Child This Winter

We have an imitation Ermine set (No. 1949 in the catalog) which will delight the heart of your little girl. It is a pretty little set made of White Coney. Well made and of good quality. Take advantage of our mail order service and get this child's set for..... $6.50

Bargains Like These On Every Page of Our Big Catalogue

Each of the offers in this advertisement is a feature from our wonderful FREE style book. This splendid book is the pulse of the fashion world. It contains illustrations of hundreds of the most interesting furs and fur styles. It also quotes astonishingly low prices on the exquisite coats and pieces described. You will be delighted with the many beautiful furs illustrated in the Fur Guide. No person can make a satisfactory choice in furs without this guide. You need a copy. Send for one today—it costs nothing to you. We will mail a copy by return post.

Natural Red Fox Muff

Red Fox is one of the few furs that have been continuously admired season by season. We have a number of fur pieces in this beautiful fur, a notable example of which is featured here—a muff at the remarkable price of $27.50. This muff is made in the new melon shape. The choicest of pelts have been used. Trimmings of a head, and a large natural tail make it very charming. The muff is lined with the finest of silk and has an eiderdown bed. No. 59. Price.. $27.50

Natural Red Fox Neckpiece

If you are in search of a Neckpiece in a fur which can be worn appropriately with any coat, we would suggest a Red Fox Neckpiece. A desirable one is our No. 339. Our designers and operators have exercised their skill to good advantage in producing this neckpiece. It is in the full animal style. A head, tail and paws are used for trimmings. The neckpiece is made with good quality natural Canadian Red Fox pelts. The price is as attractive as the quality. In whatever part of Canada you live you can get it by sending us $22

SENT FREE—Just Send Your Address on a Postcard

MAKE YOUR SELECTION

Read over the fur bargains we feature here. If anyone of them is what you want, order today. When ordering be sure to give our order number, i.e., Red Fox Neckpiece No. 339, etc. Make your selection at once.

SEND YOUR ORDER TODAY

SELLERS-GOUGH FUR COMPANY, LIMITED

244-MYonge Street TORONTO

FUR BARGAINS BY MAIL

THE CARE AND APPLICATION OF MANURE

The care and application of manure has always been an important part of farm work, and since the acute demand for foodstuffs has developed, should be given careful consideration.

Most farmers know, or should know, that the day manure is voided from an animal, it is of its greatest value, and every day it is kept out of the soil, its value decreases. The percentage of such deterioration will depend on the method we adopt to conserve it.

As the greater quantity of stable manure is made in winter, a simple method of conserving it or keeping it from losing any of its fertilizing value, is to let it freeze. Perishable goods are always now kept in cold storage, and it is an easy matter to spread each days manure thin enough to have it freeze hard, the entire pile may then be kept frozen until the time a spreader can start in the spring.

Recognizing the great importance of stable manure, not alone in the quantity of plant food and humus it may contain, but also in the beneficial effect the bacteria content has in assisting to liberate rich soil fertility and in promoting a growth of clover so necessary as a stock food, as a promoter of humus, and as a complete renovator of depleted soils. I have always endeavoured to try and learn through careful experiment, just what methods was best suited to my farm and crop rotation. Concreto floors are warmest, most sanitary, most durable and most economical in every way, and are in general use on all modern stock farms, and manure hauled daily in winter from such a floor, spread in convenient piles on the field, can be best applied with a manure spreader in the spring.

Knowing that many successful farmers spread directly from the team in winter on the field, and that this practice was advocated by directors of our Experimental Farms, I continued this method for several seasons, noting carefully the results of spring dressing in comparison, and was forced to abandon the former method as wasting entirely to much plant food. While it had the advantage of lessening spring work, the saving in labor in my opinion, did not nearly make up for the loss from loading, even though my farm was nearly flat.

We always kept sufficient stock to consume all crops grown on the farm, and until recent years all available manure was used to grow roots and corn. This was applied in the early spring for the former, on summer fallowed sod, and for the latter on a pasture or other green sward. When the quantity of manure increased (as it will continually following this line of farming), I purchased 100 acres of poor run out land, not fertile enough nor convenient to grow roots, and corn on. My practice has been, on an old pasture, to plough early in September, cultivate thoroughly and grow oats first year, the second year we manure and seed with grain again to clover, and for a number of years I have been trying several methods of applying manure. 1st, by dressing the oat stubble after harvest, (with manure made in summer), and plowing under before winter. 2nd, applying in the spring both before and after the oats were up, on land plowed the fall before and well cultivated in the spring. 3rd, applying the manure in early spring on the stubble and plowing lightly. 4th, applying the manure in the spring just before seeding on fall ploughed stubble and discing it. In every case we gave the land from ten to twelve spreader loads of manure. This dressing would grow a fair oat crop and a varying clover catch. So far I have had decidedly the best patches of clover from plowing the manure down.

I have tried all these methods several times, as I was under the impression that top dressing would give us the best results, but in no one instance, either in the fall or early spring, in fact, the difference in favour of the latter has been so marked that I have abandoned top dressing, except under occasions when we failed to get time to do it before. The difference in the oat crops was not so marked, but the growth was at least as strong on the plower under lot as on top dressed and much more uniform.

I think the reason the clover grows so much better on the former, is that being buried and thoroughly incorporated with the soil, it is made available for the plants to use much more readily than that lying on top, and top dressing actually smothers out quite a lot of clover.

This is a most important subject and worthy of consideration and careful experiment by every Maritime farmer, and while I have given the results of my experiments and have tried to learn what I can from the work of others, I realize that the question is open for discussion, and many men differ from me, especially in the system of spreading directly from the sleigh or wagon in winter. This system saves some labor, in that the manure is only loaded once and the work can be done in winter, but the spreader makes such a much better job, that I think it largely makes up for this gain, and if we are ready to take advantage of the season, there is usually a time in the early spring when a spreader can be started before we can work much on the land.

W. M. LEA.

MORE ABOUT SHEEP

The Department Can Supply You With Any Number Required

The Livestock Division of the Department of Agriculture is prepared to assist any farmer in the Province to secure first class grade ewe lambs, pure bred rams, or pure bred ewes. We want to do so and have the stock available. Why not swing in line with other farmers and grow more sheep? Just stop and consider what you are going to do with the surplus hay you will have to carry over this winter. There has been a big hay crop and prices will range low. Why not winter 15 or 20 grade ewes and a pure bred ram ,rather than a mow of hay. The sheep will prove the more profitabel.

How to Secure Sheep

The Department of Agriculture can secure any number of first class high grade ewe lambs. Part of these will be selected in New Brunswick and part will be secured from P. E. I. sources. There is no limit to the supply. Then we can fill all orders for pure bred flock headers and pure bred ewes. Some of these will come from local breeders and after this source is exhausted, an importation will be made from the Province of Quebec.

The price for grade ewes will range from $10—$15; for pure bred ram lambs and ewes $20—$25. As a guarantee of good faith the Department of Agriculture requires that with each order the purchaser deposit a sum of money sufficient to cover 50% of the purchase price; the balance to be paid when the sheep land in Fredericton. If you are interested in this proposition write the Livestock Division of the Department of Agriculture, Fredericton, N. B.

"Yes, sir, I belongs to de army of de unemployed."

"I can give you a week's work."

"Would you have me desert the army?"

"Great Scott! You're entitled to a furlough now and then, aren't you?"

GETTING ALONG WITHOUT HIM

Most farmers are up against it for help, and perhaps reader, you are too. It's hard work to get along without the man or the boy sometimes. You should have a BT Manure Carrier. It will save you half-an-hour or an hour a day, and cut out the hardest part of the chores. It takes out all the manure from the gutters in one load, or two loads if you have a lot of cows. It keeps the manure 60 feet away from the barn just as easy as throwing it out the window for it runs on a level overhead track as far from the barn as you please.

Push it out by a clean handwheel. Dump quickly by pulling trip-latch. Bucket dumps both ways. High ends prevent the manure slopping over on the way from gutter to pile.

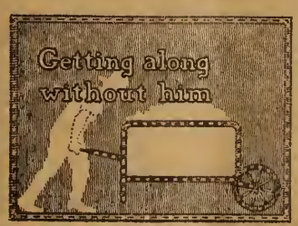
BT MANURE CARRIER WILL HELP YOU

Note that the bucket winds up close to the track so you can easily dump in wagon, sleigh or spreader or on the pile when it is high.

You have greater need for a BT Manure Carrier this Fall than you ever had. Buy it now at the beginning of the winter when your cows are just going in. Let it help you all winter long and all spring till you put your cows on pasture again. By that time you will find that it has nearly paid for itself.

Get the booklet right away. It gives details about the BT Carrier. Jack Frost will soon be here so you will have to hurry.

BEATTY BROS., LIMITED
Dept. U324 ST. JOHN, N.B.



COUPON

BEATTY BROS., LIMITED,
Dept. U324 St. John, N.B.

Send me your free booklet telling more about the BT Manure Carrier.

Your Name.....

P. O.....

Province.....

Food Controller Assures Protection For Hog Producers

There is a shortage of 32,425,000 hogs in Europe. Britain, France and Italy urgently need all the hog products that the United States and Canada can possibly produce. The Dominion Government and the Provincial Governments are co-operating to greatly increase the production of hogs in Canada. In connection with this undertaking, Hon. W. J. Hanna, the Food Controller for Canada, made the following statement to a representative gathering of packers and produce men:

"The hog producer will want to know at the very outset that there is assured to him as grower *his fair share of the price* paid by the consumer.

"Between him and the consumer is the packer and the distributor. Both he and the consumer have the right to know that the charge for packing and distributing is in relation to the cost of these services.

"In the case of flour mills, we have worked out what is practically Government control in the form of license. The only profit the miller will be allowed is 25c. per barrel on the flour. The bran and shorts will be sold to the farmers at actual cost. We are adopting a plan for control in connection with wholesale fruit and vegetable men. In the case of packing houses and cold storage plants it *must mean practical and effective Government control.*"

CONFIDENCE JUSTIFIED

The assurance to the producer of a fair share of the price paid by the consumer, considered in association with the ever increasing demand of the Allies for meat, justifies confidence in the future of the swine industry.

There is a world shortage of meat. In Europe the situation is so critical that it is now one of the vital factors in deciding the outcome of the war. And hogs, on account of their prolificacy and early maturity, provide the only way to relieve the emergency.

Some idea of the enormous increase in the consumption of bacon and hams overseas since the beginning of the war is given by a statement of the British Imports:—

In 1913 they were.....	638,000,000 lbs.
In 1914 they were.....	664,000,000 lbs.
In 1915 they were.....	896,000,000 lbs.
In 1916 they were.....	1,006,000,000 lbs.

There has been no increase in the world's hog production to meet this enormous increase in consumption. Quick action by the Canadian producer is needed. The number of hogs slaughtered at Inspected Establishments in Canada in September, 1917, show a decrease of nearly 27% compared with September, 1916. Despatches from Copenhagen state that the total prohibition of pork exports is anticipated in order to insure an adequate supply of meats and fats to the Danish population.

In view of the urgency of the situation every person who can raise hogs should seriously consider the possibility of raising at least one or two extra litters. There is an individual responsibility. Young sows which are slaughtered now only produce about 150 lbs. of meat per sow, whereas each of these young sows through her progeny could produce, at a moderate estimate, 1,500 lbs. of meat within a twelve-month period.

SAVE THE YOUNG SOWS

Every soldier in the British Army requires ¼ pound of bacon per day in order to maintain the highest bodily efficiency. Multiply this ¼ pound of bacon by the millions in the Allied Armies and some idea is secured of the urgent need of increased hog production for military purposes alone.

Dominion of Canada Department of Agriculture

LIVE STOCK BRANCH

OTTAWA

11

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 23. SUSSEX, NEW BRUNSWICK, NOVEMBER 20, 1917. Number 4.

SMALL COLD STORAGES

By J. A. Ruddick and Jos. Burgess

Large quantities of perishable food products are wasted every year in Canada for lack of simple cooling facilities, which may be provided at comparatively small cost. If farm homes, country stores, and hotels, butcher shops, etc., were more generally provided for the summer months with an adequate supply of ice, stored in a manner convenient for use, there would not only be a great saving of food supplies, but much food now consumed in a more or less deteriorated condition would be more palatable and more wholesome. The housewife, provided with such facilities, would also be able to buy in larger quantities and would have no difficulty in keeping a variety of perishable foods always on hand. A more general use of ice in the country would not only add much to the comfort of the people generally but would result in great saving of labour in many homes.

With regard to the ice which is stored, much of it is wasted, and the full benefit is not always derived from its use, owing to the faulty method of storing, and lack of facilities for utilizing its cooling power to best advantage. Many of the so-called "coolers" "ice-boxes," "refrigerators," etc., in use at present, are wasteful of ice, inefficient in the matter of cooling, and frequently very unsanitary. They have in many cases been constructed without regard to the most elementary principles of refrigeration, air circulation or sanitary conditions.

The plans, which are published herewith, have been thoroughly tried, and will, if carefully followed, give a dry storage at as low a temperature as it is practicable to obtain with the use of ice only.

It must be clearly understood that these plans are not intended to provide 'cold storage' as that term is generally understood. In a regular cold-storage warehouse various temperatures are maintained in the different rooms, according to the class of goods stored therein. For butter, meats, fish, etc., a temperature as low as 10°F. to zero is required. With the use of ice alone a temperature below 38° to 40° F. cannot be obtained. Such temperatures are useful only for keeping the more highly perishable foods in a fresh condition for a short time, say from a few days to two or three weens, depending on the natural keeping limit of the various products.

The Ordinary Storage of Ice

The mere preservation of a few blocks of ice is a simple matter. Any unoccupied corner of an outbuilding or shed can be utilized. A rough framework of boards enclosing the necessary space and affording protection from the weather is all that is required. About 40 cubic feet should be allowed for every ton of ice to be stored. There should be no floor in this kind of an icehouse. If the soil is light and porous no special provision need be made for drainage. If it is impervious clay it will be better to provide some drainage. The earth should be covered to a depth of 6 to 12 inches with small stone, coarse gravel or cinders. About one foot of sawdust or planing-mill shavings should be placed under the ice. A space of at least one foot should be left between the ice and walls, to be filled with sawdust or planing-mill shavings, the latter preferred. Cover the ice with one foot of the same material.

Improved Icehouses and Refrigerators

The plans shown and described in this article are intended for those who may have to erect special icehouses or who may desire to provide more ronvenient and permanent fadilities than the ordinary ice supply affords.

Plan No. 1 is intended primarily for the use of patrons of cheese factories, and is really a combined covered milk stand, milk cooling tank, and ordinary icehouse.

Plan No. 2 is an ordinary icehouse with dairy or milk room.

Plan No. 3 is an ordinary icehouse with refrigerator and milk room. The refrigerator in this plan is arranged on the same principle as an ordinary house refrigerator, only much larger and with a correspondingly large space for ice.

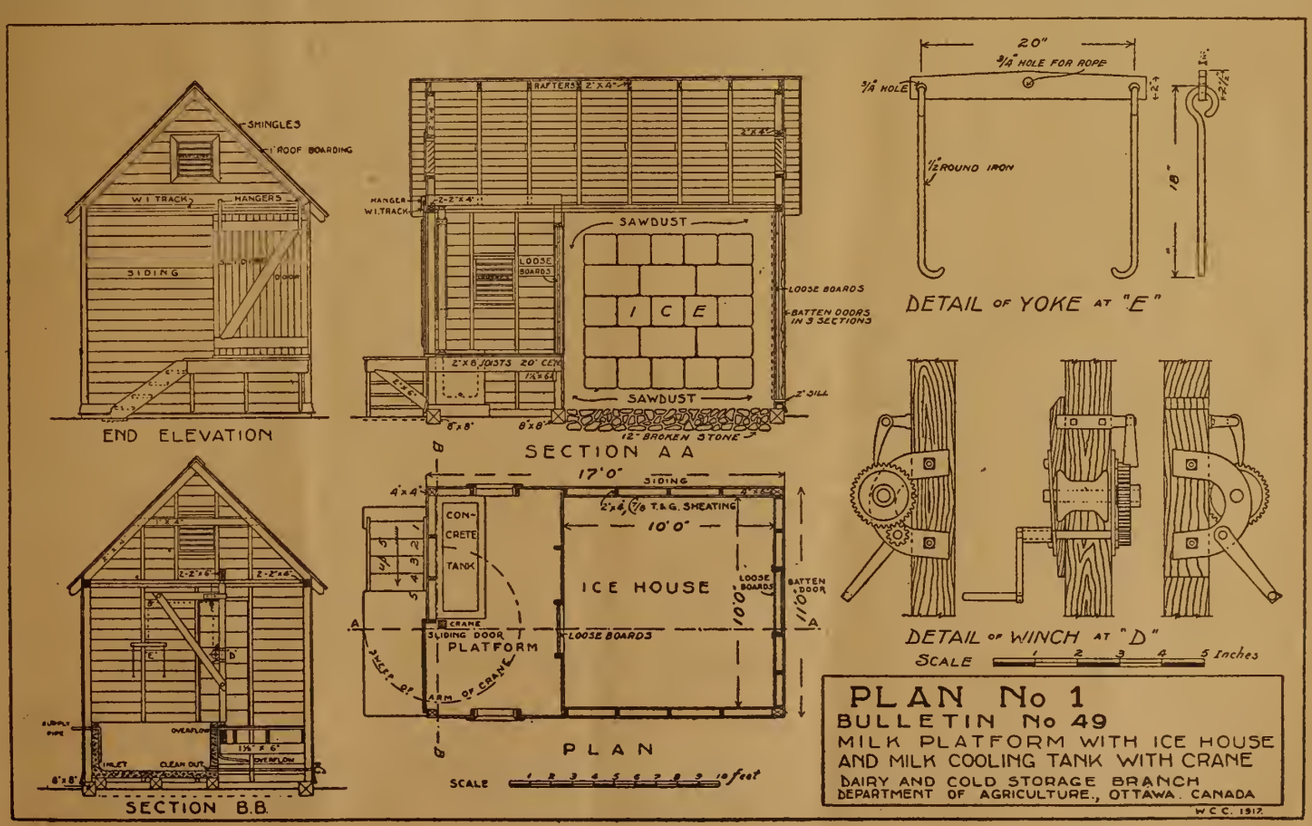
Plan No. 4 is a farm dairy, with insulated icehouse and refrigerator.

Plan No. 5 is an insulated icehouse and refrigerator, and is especially adapted for a large country house.

The design of plans 4 and 5 follows what is known as the automatic or lirculation system. It provides for a permanent insulation of the walls, floor and ceiling of the ice-chamber, which takes the place of the usual covering of sawdust or other packing material. In plans 1, 2 and 3 the insulation or covering of sawdust, shavings, or other material must be renewed every time the icehouse is filled.

In cases where convenience of operation and general efficiency are given first consideration, as against initial cost, we strongly recommend plan 4 for a dairy and cold storage combined, and plan 5 for a small cold storage suitable for country homes, institutions, hotels, etc. The first cost is greater, owing to the extra insulation, but the convenience and satisfaction which the circulation system gives, more than make up for the extra cost.

The advantages and disadvantages of the two systems are obvious. Plans, 1, 2, and 3 provide for the cheapest construction, but the annual renewal of the insulation or covering material, and the labour of cleaning the ice, and filling the ice-boxes or refrigerators from time to time, are very important considerations. Plans 4 and 5 have the very decided advantage of being automatic in op-



eration, thus requiring no attention throughout the season. The ice not being covered permits of a circulation of air between the ice-chamber and refrigerator for cooling purposes. The opening at the bottom of the partition between the ice-chamber and refrigerator allows the cold air to flow into the refrigerator while the warm air returns to the ice-chamber through a similar opening at the top of the partition.

These openings should not be over 6 by 18 inches, and both should be fitted with sliding covers to regulate the circulation of the air, or to shut it off entirely when not required. The circulation system also has the advantage of giving dry storage, because the moisture in the air which circulates is condensed on the cold surface of the ice.

Section BB. plan 4, and section AA. plan 5 shows the refrigerator with a lower ceiling than the ice-chamber. The object of this is simply to reduce the air space which has to be cooled. the ceiling of the refrigerator need not be more than 7 feet high. Any space in excess of that height would be useless for storage purposes.

SPECIFICATION FOR PLAN No. 1

Ice House with Milk Platform, Cooling Tank and Crane

Construction.—Level off the earth and bed 8-inch by 8-inch sills, halve them at the corners and bolt them together with two ⅜-inch bolts to each joint.

Set up 4-inch by 4-inch by 6-inch corner posts housed into sills, spiked and braced. Set up 2-inch by 4-inch filling in studs and lay 2-inch by 4-inch double plate with joints staggered. Studs may be set at 24-inch or 30-inch centres.

Roof rafters 2-inch by 4-inch set at 24-inch centres and heeled over plate and spiked.

Sheathing.—The wall studs to be covered on the outside with matched siding and on the inside of icehouse only with rough lumber or tongued and grooved sheathing. The rafters to be covered on the outside with dressed lumber and shingles laid 4½ inches to the weather, or other roofing material.

Joists.—The joists of platform to be 2-inch by 8-inch, set at 20-inch centres. The joists to be extended out through wall to form a landing for outside steps. The joists to rest on top of 1½-inch by 6-inch ribbon pieces, housed into and nailed into studding. The outer end of joist forming landing to be brace with 2-inch by 6-inch struts.

Floors.—The oor of icehouse is covered with small stone or coarse gravel to a depth of 12 inches, and well pounded down. The floor of platform room is alid with 2-inch plank, leaving a space of one-quarter inch between each piece.

Crane.—The crane is constructed with a 4-inch by 4-inch post. The boom is 4-inch by 4-inch secured to post with wrought-iron straps, and bolted; also braced with a 1-inch by 4-inch on each side, bolted to boom and post. The winch is constructed of wrought-iron wheel supports, cast-iron gearing and dog, and hardwood spool. The yoke is of wrought-iron.

Tank.—The tank in platform is constructed of concrete in proportion of one part Portland cement, three parts sharp sand, and five parts of broken stone. The inside surface of tank should be plastered 1 inch thick with mortar composed of one part cement and one part sand. The tank requires a 1-inch supply pipe, 1¼-inch overflow pipe, and a 1-inch draw-off pipe with stop-cock.

The openings to ice-house are of 1-inch loose boards, arranged to slide vertically in a groove.

The outside doors are constructed on a 1-inch braced frame and sheathed with 1-inch tongued and grooved boards.

The door to platform room is hung with wrought-iron barn door track and trolley. The rear door to ice-house is hung with heavy T hinges and secured with hasp and door pull.

The ventilating windows are constructed of 1⅛-inch x 5-inch frame with ⅝-inch louvres boards set 3 inches apart and at an angle of about 60 degrees.

The outside steps have a 2-inch strings and 1½-inch treads, housed into strngs, and spiked.

The outside may be painted two coats in any desired colour.

Before putting in the ice, lay 12 inches sawdust or planer-mill shavings over the area of the floor; also surround the ice with at least one foot of the same material. The space over the ice should be well ventilated. This helps to carry og the heat which will accumulate under the roof, and to keep the sawdust or shavings on top of the ice in a dry condition.

SPECIFICATION FOR PLAN No. 2

Icehouse with Dairy.

All lumber used in the dairy should be thoroughly seasoned spruce, which is odourless.

If the soil under the icehouse is impervious clay, drainage should be provided.

Foundations.—Trench excavations to be made as indicated on the drawings. The foundations of the building may be constructed either of concrete or stone walls. A good mixture of concrete in one part of Portland cement, three parts of sand, and five parts of 1½-inch or 2-inch broken stone or clean gravel.

Floors.—Cover the area of the floors with 12 inches of broken stone, coarse gravel or cinders.

The floor of the dairy and the tanks are constructed of 4 inches of concrete and the surface finished with 1-inch coat of cement mortar, trowelled smooth. The mortar is composed of one part cement and two of coarse sand. The oor is graded 1 inch in 5 feet to slope to the channel drain formed in the concrete floor. The platforms for the separator and pump are constructed in connection with the floor, and built to any desired height.

Drains.—The drain piping inside the building, stand-pipes and traps in tanks, and traf at the outside of buildings are of 4-inch cast-iron. The grating to hand hole of outside trap may be either wrought or cast-iron.

Walls.—A 2-inch x 5-inch or 2-inch x 6-inch sill should be bedded on top of concrete or stone foundation walls. The exterior walls are constructed of 2-inch x 4-inch studding set about 20 inches on centres. The corner posts maf be 4 by 4 inches, with 2-inch x 4-inch pieces spiked to two sides to receive the sheathing, or 4-inch x 6-inch with 2-inch x 4-inch spiked on one side. The corner posts should be tenoned into sills, and well braced. The outside face of exterior walls should be sheathed with ⅞-inch tongued and grooved spruce sheathing, then covered with two ply of building paper on the dairy and one ply on the ice-house, and finished with pine siding or clapboards. The inside face of the dairy should be sheathed vertically with ⅞-inch tongued and grooved spruce sheathing. The ice-house may be finished inside with spruce sheathing or rough lumber.

Partition.—The partition studding is 2-inch x 4-inch, and sheathed both sides with ⅞-inch tongued and grooved spruce or rough lumber on the side next the ice-house.

Ceiling.—The ceiling joists over dairy are 2-inch x 8-inch, set 20 inches on centres, with two ply building paper and one course of ⅞-inch tongued and grooved spruce underneath joists.

Roof.—The roof is constructed with 2-inch x 6-inch rafters at 20 inches on centres, and sheathed on the outside with ⅞-inch dressed lumber, and then covered with shingles laid 4½ inches to the weather, or other roofing material.

Doors.—The exterior door to dairy is ⅞-inch battened door with 1¾-inch stiles, stiles rabetted to receive battens. The doors to icehouse to be 1-inch battened doors; one set of loose 1-inch boards to be placed in door openings, as shown on drawings.

Windows.—The windows to be fitted with 1½-inch double sash as shown, size of windows 2 feet 6 inches by 5 feet.

Ventilators.—Construct louvre windows in gable ends with 1½-inch frame and ¾-inch louvre boards.

Finish—The interior of dairy should be given two coats of whitewash. The exterior may be painted two coats in any desired colour.

Before putting in the ice, lay 12 inches of sawdust or planer-mill shavings over the area of the floor; also surround the ice with one foot of the same material.

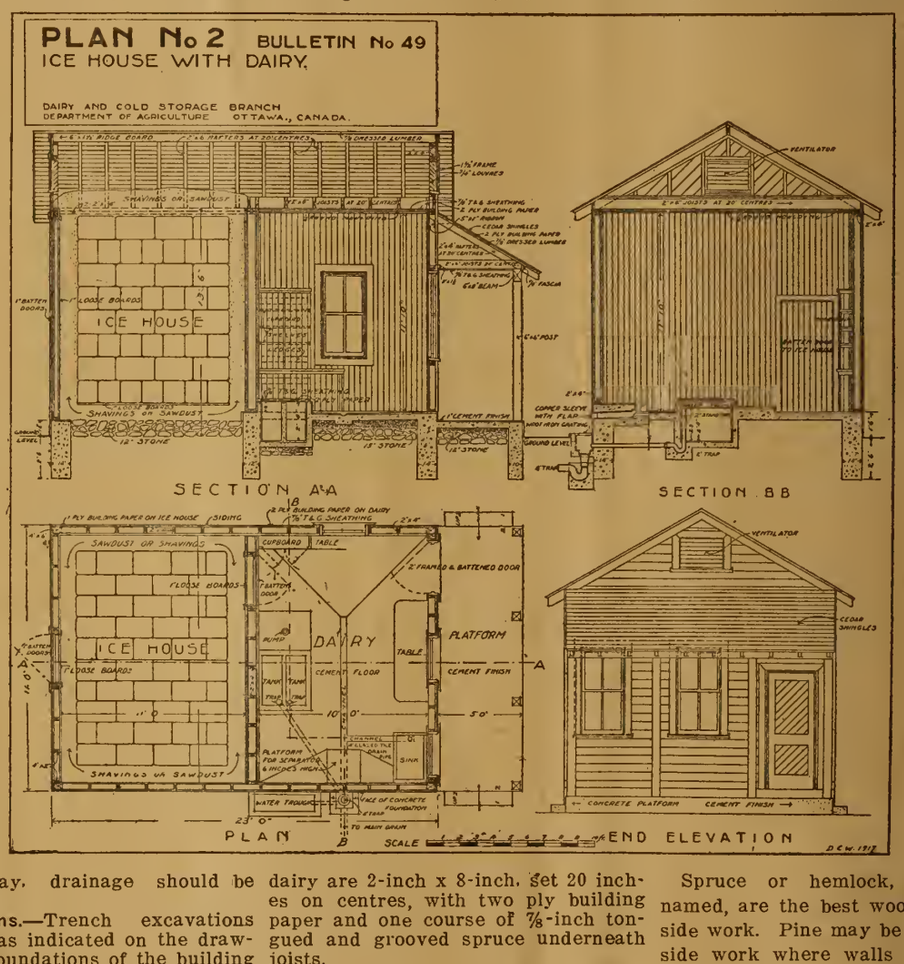
Note.—The insulation of the icehouse would be improved by filling the space between studding with shavings or sawdust, or, on the other hand, if it is desirable to cheapen the construction, the sheathing and paper on the outside of the icehouse may be left off and the studding simply covered with clapboards or siding.

The concrete platform, shown at the end of the building is a convenient place for loading, but it is not a necessary part of the construction and would increase the cost considerably.

SPECIFICATION FOR PLAN No. 3

Icehouse with Refrigerator and Milk Room

All lumber used in the construction of the ice-box, refrigerator and milk room must be thoroughly seasoned, and free from all knots, shakes, or other defects. An odourless lumber like spruce is necessary to avoid the danger of tainting milk or butter.



Spruce or hemlock, in the order named, are the best woods for all inside work. Pine may be used for outside work where walls are insulated on the inside.

Drainage.—If the soil under the icehouse is impervious clay, drainage should be provided.

Founlations.—The foundations may be constructed either of concrete or stone. A good mixture for concrete is one part Portland cement, three parts of sand and one part 1½ or 2-inch broken broken stone or gravel.

Cover the area of the icehouse and milk-room floors with 12 inches of broken stone, coarse gravel, or cinders.

Walls.—The outer walls are constructed by first bedding on the concrete or stone walls a 2-inch x 5-inch sill and upon this sill erecting the corner posts and 2-inch x 4-inch studding at about 24 inches on centres, and a double 2-inch x 4-inch plate on top of studding.

The exteriar walls of refrigerator and ice-box have double studding, staggered as shown. The partition, dividing ice-house from ice-box and

milk-room, has 2-inch x 6-inch studding.

The exterior walls are sheathed with ⅞-inch tongued and grooved sheathing, then covered with two ply building paper on the refrigerator and milk room and one ply on the ice-house, and finished with siding or clapboards. The interior of icehouse and milk-room have single ⅞-inch tongued and grooved sheathing excepting around ice-box and refrigerator, which has double sheathing. (The inside of the icehouse may be finished with rough lumber, excepting that part of the wall which adjoins the ice-box.) The interior of the ice-box and refrigerator has double sheathing throughout, with two ply damp-proof paper between. The space under floor and in walls, partitions and ceiling is filled with sawdust or shavings, preferably shavings. Make a 6-inch opening the full width of partition at top and bottom of partition separating ice-box from refrigerator for circulation of cold air.

Floors.—The floor of ice-box and refrigerator is constructed as follows: level off and cover the earth with about one foot of coal cinders, dry sand or gravel; bed in filling 2-inch x 4-inch sleepers and floor over with ⅞-inch tongued and grooved flooring. Set 2-inch x 6-inch joists at 20-inch centres, and fill in between with sawdust or shavings, then lay a double ⅞-inch floor of tongued and grooved boards, with two ply of damp-proof paper between floors.

The floor in the milk-room should be constructed of concrete and finished with ½-inch of cement mortar, trowelled smooth.

Ceiling.—The ceiling of refrigerator and ice-box is constructed of 8-inch joists, filling, and double sheathing top and bottom, with two ply damp-proof paper between the sheathing underneath, and two ply building paper above.

The ceiling of milk-room is covered with two ply building and one course of sheathing underneath joists.

About 6 inches above the floor in ice-box, place 2-inch x 4-inch bars at 4-inch centres, as shown. The floor of ice-box is covered with galvanized iron extending up on walls, forming a pan, this pan to be connected with a 2-inch trapped drip pipe, as shown.

Roof.—The rofo is constructed of 2-inch x 4-inch rafters set at 24-inch centres, sheathed on top with ⅞-inch dressed lumber and then covered with shingles laid 4½ inches to the weather, or other roofing material.

Doors.—The exterior doors have 2-inch stiles and ⅞-inch battened panels. The doors to ice-box and refrigerator to be fitted with bevelled frames, the edges of doors to be bevelled to fit the frames, and doors double sheathed both sides with ⅞-inch tongued and grooved spruce, and two ply paper between. The 6-inch space in doors is to be filled with shavings, and the bevel faces to be covered with felt or canvas to make as nearly as possible an air-tight joint.

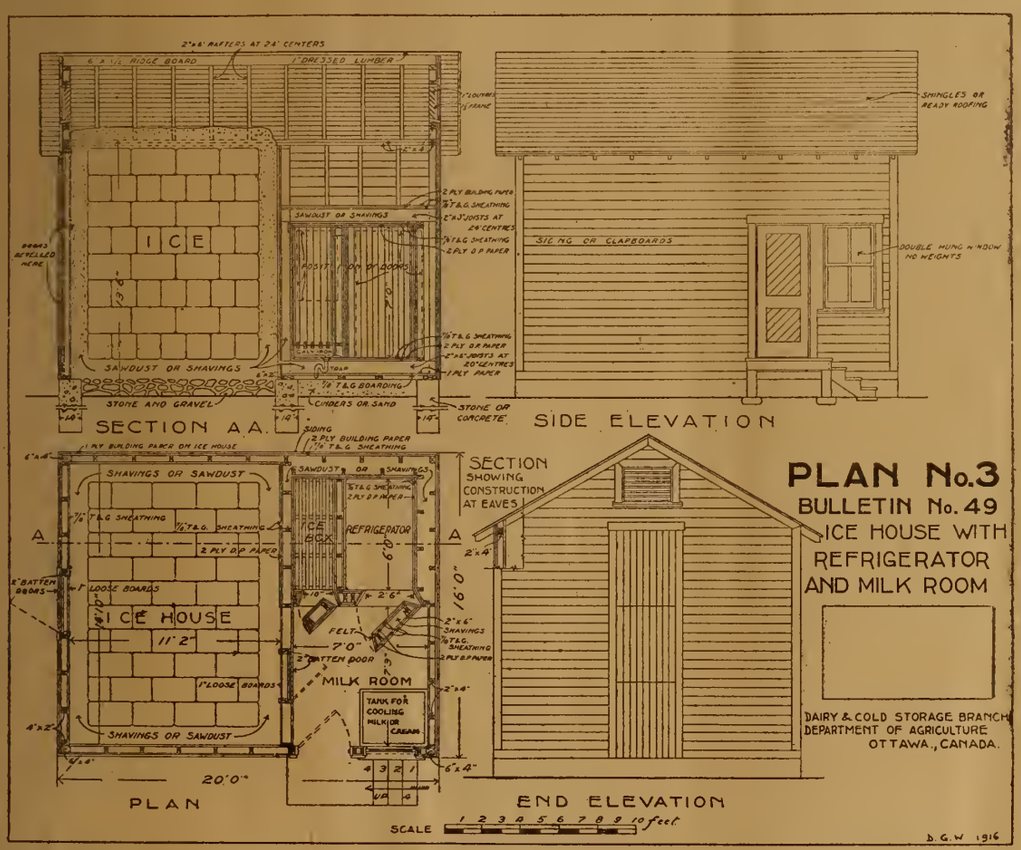
Windows.—The windows to be fitted with 1½-inch double sash, as shown.

Ventilators.—Construct louvre windows in gable ends with 1½-inch frame and ¾-inch louvre boards.

Finish.—The interior of the refrigerator and milk-room should be given two coats of whitewash. The ice-box should have two coats of shellac or boiled linseed oil. The exterior may be painted two coats in any desired colour.

Before putting in the ice, lay 12 inches of sawdust or planer-mill shavings over the area of the ice-house floor, also surround the ice with 1 foot of the same material.

Note.—The insulation of the ice-house would be improved by filling the space between the studding with shavings or sawdust or, on the other hand, if it is desirable to cheapen the construction the sheathing and paper on the outside of the icehouse may be left off and the studding simply covered with siding or clapboards.



SPECIFICATION FOR PLAN No. 4

Farm Dairy with Insulated Icehouse and Refrigerator

All lumber must be thoroughly seasoned and dry and free from all knots, shakes or other defects, and must be odourless.

Spruce or hemlock in the order named are the best woods fr all inside wrk. Pine may be used for outside work where the walls are insulated on the inside.

Foundations.—Trench excavations to be made as indicated on the drawnigs. The foundations ma ybe constructed either of concrete or stone.

A good mixture of concrete is one part Portland cement, three parts of sand, and five parts of 1½-inch or 2-inch broken stone or clean gravel.

The area of the ice-chamber should be excavated to the desired depth. Grade the earth with a slope of 2 inches to one end, and lay one row of 3-inch field tile along the lower end and extending through the foundation to a drain. Four rows of the same sized tile should be laid across the floor and connected with the row draining to the outside. A trap should be provided just outside of the foundation to prevent warm air entering. Cover the floor area with 12 inches broken stone, coarse gravel or cinders, and on top of the filling place 12 inches of shavings or sawdust, covering same with 1-inch rough lumber.

Floors.—The floor of .dairy and tanks are constructed of 4 inches of concrete and the surface finished with 1-inch coat of cement mortar trowelled smooth. The mortar is composed of one part cement and two of coarse sand. The floor is graded 1-inch in 5 feet to slope to the channel drain former in the concrete floor. The platforms for the separator and pump are constructed in connection with the floor and built to any desired height.

The floor of refrigerator and ante-room has a concrete slab with 3 inches of cork board laid on top, and finished with a 1-inch coat of cement mortar.

All concrete floors should be laid on top of broken stone or large gravel ballast, as indicated on drawings.

The drain pipes inside the building, stand pipes and traps in tanks, and trap at outside of builing are of 4-inch cast-iron pipes. The grating to hand-hole of trap outside the building may be either wrought or cast-iron.

Walls.—The walls of dairy are constructed of 2-inch x 4-inch studding set about 16-inch centres, with 4-inch x 6-inch corner posts. The walls are sheathed inside and outside with ⅞-inch tongued and grooved sheathing, and then covered on the outside with two ply builing paper and finished with siding or clapboards. The walls of refrigerator, ice-chamber, and ante-room are constructed of 2-inch x 4-inch studding, staggered as shown on plan, and sheathed with double ⅞-inch tongued and grooved spruce sheathing insidefi with two ply of damp-proof paper between sheathing. The outside is constructed of single sheathing, two ply of building paper, and finished with clapboards or siding. The inside face of ice-chamber walls has two ply of damp-proof paper and then furred with 1-inch x 2-inch furring strips and sheathed with another course of ⅞-inch sheathing.

Partitions.—The partition between ice chamber, refrigerator, and ante-room is constructed the same as the walls, with double sheathing each side and two ply damp-proof paper between. The ice-chamber side has, in addition, two ply damp-proof paper, 1-inch x 2-inch furring strips, and sheathing.

The partition between the refrigerator and ante-room is constructed of 2-inch x 6-inch studding, with double sheathing on both sides and two ply damp-proof paper between sheathing.

Make 6-inch x 12-inch openings at the ceiling and the floor of partition between refrigerator and ice-chamber for air circulation; these openings to have sliding doo dampers.

Ceilings.—The ceilings are constructed of 2-inch x 8-inch joists set at 20-inch centres, with double ⅞-inch tongued and grooved sheathing on top and bottom, with two ply damp-proof paper between sheathing underneath, and two ply building paper above. The ice-chamber ceiling has, in addition, two ply of damp-proof paper, 1-inch x 2-inch furring strips, and sheathing similar to walls. The ceiling of the dairy has two ply building paper and one course of sheathing on underside of joists. The ceilings of refrigerator and ante-room are 7 feet high to underside of sheathing; ceiling of ice-chamber and dairy are 12 feet high.

The walls, ceilings, and partitions of ice-chamber, refrigerator, and ante-room are filled with sawdust or shavings, preferably shavings.

Roof.—The roof is constructed of 2-inch x 6-inch rafters set at 20-inch centres and covered on the outside with ⅞-inch dressed lumber, two ply building paper, and shingles laid 4½ inches to the weather, or other roofing materiali.

Platform.—The platform has 6-inch x 6-inch posts, 6-inch x 8-inch beam, 2-inch x 6-inch ceiling joists sheathed on the under side, and 2-inch x 4-inch rafters sheathed and shingled. (The platforms are convenient for loading and passing from the dairy to the stable, but are not a necessary part of the construction, and will add materially to the cost.)

Doors.—The exteriar doors to dairy are ⅞-inch battened doors with 1¾-inch ledged and braced frame. The doors to ante-room, refrigerator, and ice-chamber are to be fitted with bevelled frames, the edges of doors to be bevelled to fit frames, and double sheathed both sides with ⅞-inch tongued and grooved sheathing, with two ply damp-proof paper between. The doors to have a 6-inch space as shown on plan, filled with shavings. The bevelled face of doors to be covered with felt or canvas to make as nearly as possible an air-tight joint.

Windows.—The small window in the ante-room has a 1½-inch inside and outside sash. A wooden shutter hinged at the top or an awning should be provided to keep out the rays of the sun.

The windows in dairy to be fitted with 1½-inch double hung sash as shown, size of windows 2 feet 6 inches by 5 feet.

Finish.—The interior of the ice chamber should be given two coats of boiled linseed oil or shellac. The interior of the refrigerator, ante-room and dairy should have two coats of whitewash. The exterior may be painted two coats in any desired colour.

SPECIFICATION FOR PLAN No. 5

Insulated Icehouse and Small Refrigerator

All lumber must be thoroughly seasoned and dry and free from knots, shakes, and other defects, and must be odourless.

Spruce or hemlock, in the order named, are the best woods for all inside work. Pine may be used for outside work where the walls are insulated on the inside.

Foundations.—Trench excavations to be made as shown on the drawings. The foundations may be constructed either of concrete or stone.

A good mixture of concrete is one part of Portland cement, three parts of sand and five parts of 1½-inch or 2-inch broken stone or clean gravel.

The area of the ice-chamber floor should be excavated to the desired depth. Grade the earth with a slope of 2 inches to one end, and lay one row of 3-inch field tile along the lower end and extending through the foundation to a drain. Four rows of the same sized tile should be laid across the ground and connected with the row draining outside. A trap should be provided just outside of the foundation.

Cover the floor area with 12 inches of broken stone, coarse gravel, or cinders, and on top of this filling place 12 inches of shavings or sawdust, covering same with 1-inch rough boards.

Walls.—The walls are constructed of 2-inch x 4-inch studding, staggered as shown on plan. The walls are double sheathed inside with ⅞-inch tongued and grooved spruce, with two ply of damp-proof paper between. The outside face has a single course of ⅞-inch sheathing with two ply of building paper, and then covered with siding or clapboards. The ice-chamber, in addition to the above, has the inside sheathing covered with two ply of damp-proof paper and then furred with 1-inch x 2-inch furring strips and sheathed with ⅞-inch tongued and grooved sheathing.

Partitions.—The partition between the ice-chamber, refrigerator, and ante-room is constructed the same as the walls, with double sheathing each side and two ply damp-proof paper between. The ice-chamber side has, in addition, two ply damp-proof paper between. The ice-chamber side has, in addition, two ply damp-proof paper, 1-inch x 2-inch furring strips, and sheathing.

The partition between the ante-room and refrigerator is constructed of 2-inch x 6-inch studding with double sheathing on both sides, and two ply damp-proof paper between sheathing.

Make 6-inch x 12-inch openings at ceiling and floor in partition between ice-chamber and refrigerator for circulation of cold air; these openinfs to have sliding dampers.

Ceilings.—The height of ceiling in ante-room and refrigerator is 7 feet from floor in the clear, and that in ice-chamber is 12 feet. The ceilings are constructed of 2-inch x 8-inch joists set at 20 inches on centres and double sheathed top and bottom with two ply damp-proof paper between sheathing underneath and two ply building paper above. The ceiling of ice-chamber has, in addition, two ply of damp-proof paper 1-inch x 2-inch furring strips and another course of ⅞-inch sheathing similar to walls.

The walls, ceilings, and partitions are completely filled with sawdust or shavings preferably shavings.

Roof.—The roof is constructed of 2-inch by 4-inch rafters set at 24-inch centres and covered with ⅞-inch dressed lumber, two ply buildlng paper, and shingles laid 4½ inches to the weather, or other roofing material.

Floors.—The floor of ante-room and refrigerator is constructed by first laying a course of coal cinders or sand 8 inches thick and bedding 2-inch x 4-inch sleepers on top, then set 2-inch x 6-inch joists at 24-inch centres across sleepers, and finish by laying one course of ⅞-inch sheathing diagonally; cover with two ply of damp-proof paper and 1-inch tongued and grooved spruce flooring.

In plan No. 4, concrete an cork board are used in the construction of the refrigerator and ante-room floors. This construction is much the best, and as it is of permanent nature will be the cheapest in the end.

Doors.—The doors to ice-chamber, refrigerator, and ante-room to be fitted with bevelled jambs, and edges of doors bevelle to fit; the doors are double sheathed inside and outside with two ply of damp-proof paper between sheathing, the doors to have a 6-inch space, as shown, filled with shavings, the bevelled faces of doors to be covered with felt or canvas to make as nearly as possible an air-tight joint.

The exterior door opening into the ice-chamber is a batten door 6 feet by 3 feet, which is provided for stowing ice during the winter season. The frame is bevelled and the edges of the door bevelled to fit the frame. The door is made of two courses of ⅞-inch sheathing, with two ply of building paper between. Two sets of loose boards must be provided as shown on plan, one set to fit into the frame on the inside and the other set to fit as close to the door as possible. These boards are to be placed in position when the ice chamber is filled and the space between (about 10 inches) filled with planer-mill shavings or dry sawdust.

In cases where it is convenient to store the ice through the ante-room, this door may be dispensed with, as a direct opening outside is liable to cause waste of ice unless the filling of shavings or sawdust is carefully packed into place each time the door is used.

Window.—The small window in the ante-room has 1½-inch inside and outside sash. A wooden shutter hinged at the top, or an awning, should be provided to keep out the rays of the sun.

Ventilator.—Construct louvre windows in gable ends with 1½-inch frame and ¾-inch louvre boards.

Finish.—The interior of the ice-chamber should be given two coats of boiled linseed oil or shellac. The interior of the refrigerator and ante-room should have two coats of whitewish. The exterior may be painted two coats in any desired colour.

General Notes

Insulation.—Refrigerating engineers have during the last few years practically discarded the empty space—the so-called dead-air space—once extensively used for insulating purposes. Theoretically, a dead-air space is a poor conductor of heat, but the ordinary air space is not a dead-air space. As one side of the space becomes warmer than the other, the air immediately in contact with it becomes lighter on account of the increase in temperature, and at once ascends, while colder air from the oter side takes its place. Thus we have a circulation of air within the space, and heat is carried from one side to the other by convection.

Moreover, it is extremely difficult to get the work done properly when empty spaces are depended on for insulation. The slightest crack or opening, even a nail hole, tends to destroy the efficiency of this form of construction.

In the insulation of wooden walls, the best practice at the present time provides for an outer and inner shell, as nearly as practicable impervious to air and dampness, with a space between to be filled with some non-conducting material. The width of the space will depend on the filling to be used and the temperature to be maintained in the storage room.

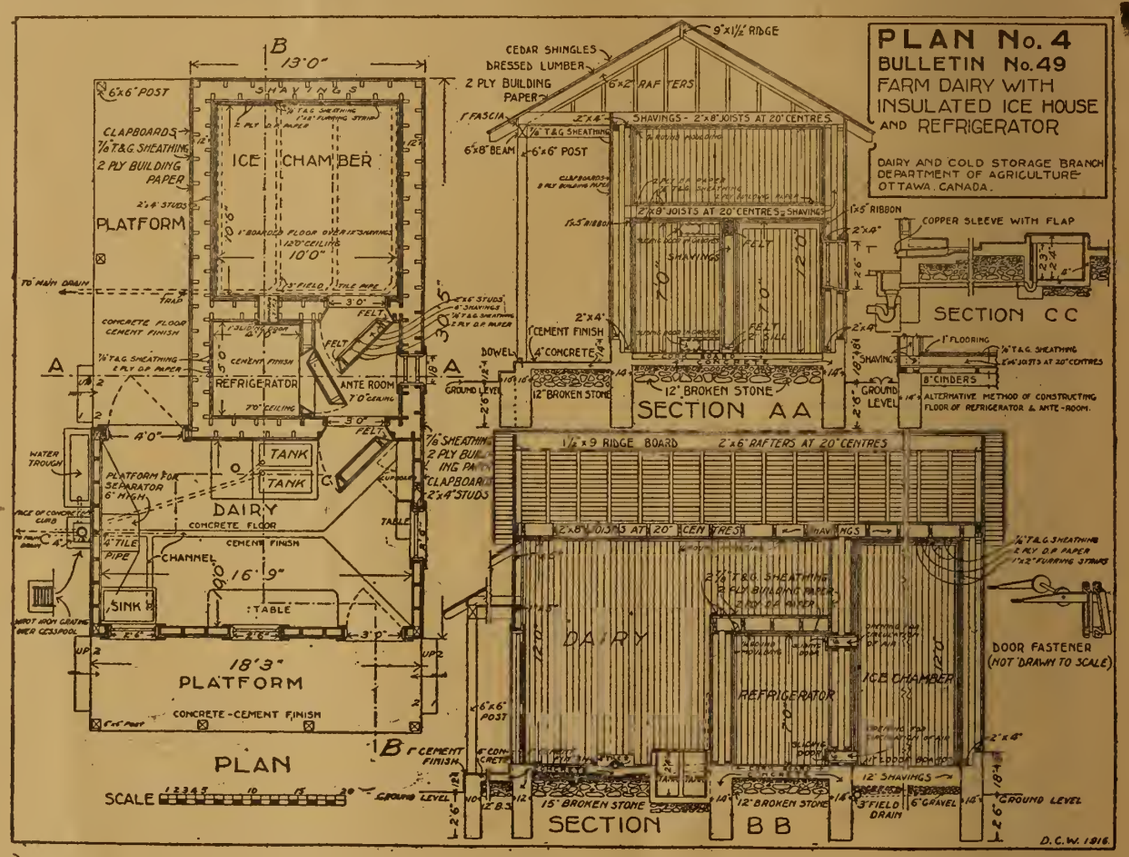
For a cold storage constructed of wood, there is no better material for filling spaces than planer-mill shavings. Where available at all, they are cheap; they are elastic and do not settle readily; but, most important of all, they can be obtained in a very dry condition, which is essential; and further, they do not absorb moisture readily arter being placed in position. There may be some difficulty in obtaining a sufficient supply of shavings in places remote from manufacturing centres, but many of the large sash and door factories now pack shavings in bales, weighing about 75 pounds each, for convenience in shipping. The weight of shavings required to fill a given space will depend somewhat on the kind of wood from which they are made, and also to some extent on how tightly they are packed, but a fair average is from 7 to 9 lbs. per cubic foot of space. They should be packed sufficiently to prevent subsequent settling.

Sawdust versus Shavings.—Because it costs little or nothing and is readily available in most country districts, there has been a tendency to use sawdust for filling spaces in walls in small cold-storage buildings. We would point out, however, that it is not as satisfactory a material for this purpose as shavings, owing to the fact that while shavings are cut from dry ulmber, sawdust is cut from green timber and is generally more or less damp. The dampness destroys its insulating value and encourages the growth of mould and rot, resulting in a musty odour in the storage room which would be injurious to the food stored therein. The growth of mold and heating would also cause settling of the sawdust and would leave open spaces which weakens the insulation. It is very important, therefore, that sawdust which is used for filling walsl must be as dry as possible or the storage will be very unsatisfactory, and will soon become unfit for storing perishable foods.

Insulation must be dry.—One of the problems in cold storage construction is to provide against moisture being absorbed by the materials composing the insulation. In the construction of small ice cold storages, moisture or dampness is more likely to come from the inside, and provision must be made to protect the insulation. It must be understood that dampness, as referred to in this connection, does not imply the presence of water in the ordinary sense, but simply the presence of moisture as we find it, say, in green lumber as compared with dry or well-seasoned lumber.

In a wooden wall filled with shavings, it is the shavings which must be protected from dampness. This can be done by using damp-proof paper between the sheathing, or boarding, on the inside of the walls.

Brick, stone or concrete walls.—If it is desired to erect a building of brick, stone, or concrete, such walls will only take the place of the outside finish of the wooden walls of the plans shown in this bulletin, and the same insulation must be used inside the brick, stone, or concrete. None of these materials have much insulating value, and as erected in an ordinary wall are just about equal, for that purpose, to two courses of lumber.



Brick or cement absorb moisture readily, and unless they are given some special water-proofing treatment, the insulating quality of such a wall is rather low. The outside surfaces of brick walls may be painted with some eect, but where shavings are to be used inside of brick or concrete, the inner surface may be coated with pitch, paraffin wax, or some of the patented coatings on the market. Coating walls with either pitch or paraffin in cold or even cool weather without special apparatus is a rather difficult operation, on account of the tendency of both substances to harden very quickly. In using pitch, care must be taken not to get tar, or any mixture of tar, whic hwould be ruinous on account of its odour. Pitch is odourless when it hardens. If the inside surfaces of brick or concrete walls cannot be properly waterproofed, the next best plan is to put 1-inch furring strips on the wall, then one course of matched lumber, which will form the inside surface of the space to be filled. It will be all the better if the sheathing is covered with damp-proof paper.

Size of ice-chamber.—It is impossible to lay down any general rule for the size of the ice-chambers, as so much depends on what the ice or the refrigerator is used for. In plans 1, 2 and 3, one ton of ice will occupy about 40 cubic feet of space, including covering material. In plans 4 and 5, where no covering material is used, it requires a somewhat less space for a ton of ice, depending on how closely it is packed.

Quantity of ice required for season's supply.—A cubic foot of ice weighs 57½ pounds. One ton of solid ice measures approximately, 35 cubic feet. A consumption of 2 cubic feet (115 pounds) per day for four months would amount to nearly seven tons.

Allowing for the waste when such a comparatively small body of ice is stored, a building 10 feet square and 10 feet high will afford ample space for that quantity of ice, if it is carefully packed.

Fifty pounds per day for four months would amount to three tons. Allowing for waste, a solid block of ice 6 feet square and 6 feet high should be sufficient if properly stored.

For the purpose of estimating the weight of ice roughly by the number of blocks, the following table will be found convenient:—

12	blocks	18	x	36	inches,	8	inches thick	= 1 ton.
10	"	18	x	36	"	1 0	" "	= 1 ton.
8	"	18	x	36	"	1 2	" "	= 1 ton.
7	"	18	x	36	"	1 4	" "	= 1 ton.
6	"	18	x	36	"	1 6	" "	= 1 ton.
5	"	18	x	36	"	2 0	" "	= 1 ton.

Plan for a larger cold storage.—Any person who desires to erect a larger and in some respect a more complete cold storage should apply for a copy of Bulletin No. 36, which gices particulars of a plan designed specially for creamery purposes.

Blue Prints Supplied Free.—Blue prints on a scale of 1 inch to 2 feet for any of the plans in this article will be supplied free on application to the Dairy and Cold Storage Commissioner, Ottawa, Ont.

How to Prepare Whitewash

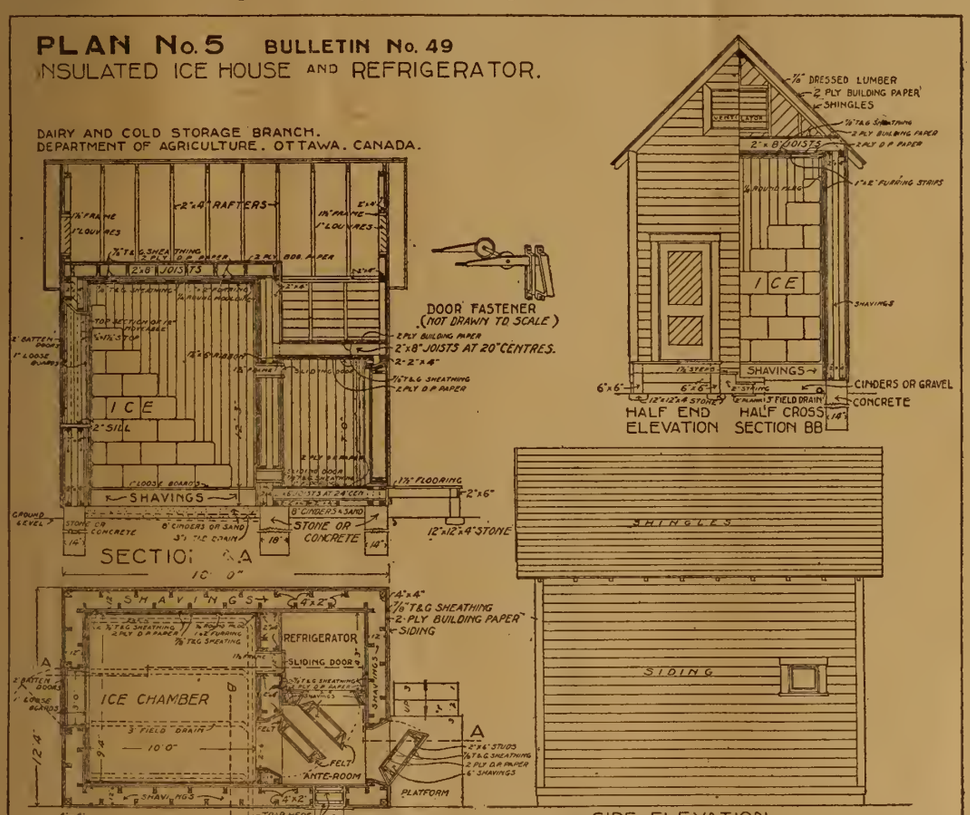
Slake half a bushel of lime with hot water, stirring continuously while slaking, strain it and add one peck of sale dissolved in warm water. The proper consistency for whitewish is a thin paste, and water will have to be added to secure this consistency after mixing the dissolved salt with the whitewash.

To each 12-quart pail of whitewash composed as above, add a good sized handful of Portland cement and a teaspoonful of ultra-marine blue. The cement and blue should be added only as the whitewash is being used, and should be thoroughly stirred into the whitewash; otherwise, when applied it will be streaked.

If there are any pipes or other equipment in the rooms to be whitewashed that will rust, do not use salt in the mixture around the piping.

Do not put on too thick a coat—just enough to cover the surface in good shape—then allow from one to three days for drying. If you dry the whitewash out too quickly it will flake or brush off very easily; on the other hand, a very slow drying will allow the water to soak into the wood and may cause unpleasant odours.

Whitewash containing Portland cement must be used without delay.



NEW BRUNSWICK CROPS FOR 1918

More consideration for the non-perishable crops.

The last month has been one of anxiety for every farmer. The weather has not been particularly good for haymaking and labor has been very scarce. Many have just finished the hay or expect to do so shortly and the general report is that the quality of the hay made late is very poor. Poor hay is of but doubtful value for any class of live stock, except for bedding in the stables, and it is a well-known fact that there is not sufficient stock in New Brunswick to eat the good hay, and the market for any class of hay is not very active. To the casual observer, then, it would appear that New Brunswick has too many acres under hay and the time now being spent upon making poor hay gives practically no return to the farmer for his outlay and would be, perhaps, much better spent looking after a crop of wheat, barley or oats. The conservation and the intelligent direction of available labor was never more important than at the present moment and that spent upon gathering in overripe hay can, no doubt, be used in other channels to the mutual advantage of the farmer and of the country.

We would urge every man who harvests a large quantity of hay to consider a few more acres of wheat, oats or barley, for 1918. The difference in labor would not be very great, except the ploughing this fall, and the crop would be of far greater value than the hay which would grow upon the same land and be of little value due to overripeness. If every farmer could find time this fall to plough a few extra acres of sol for one of the cereals, the increase throughout the province would be enormous. If there is a real food shortage, and we believe there is, we require an abundance of cereals. Every man who earns his living by the sweat of his brow wishes to sell his labor fo rthe highest possible figure, which can be done only when every day is spent at some activity which at least promises well.

The wisdom of depending altogether upon a one crop system can be seriously questioned and it is doubtful if such can be recommended for the average farmer throughout North America. The fatal results of such can be traced from the Gulf of Mexico to the wheat sections of western Canada and to-day prodigious efforts are being put forth to remedy the evil. New Brunswick must not become a crop country. At present too much hay and too little grain is grown and perhaps in some sections too many potatoes and too few cattle are considered. Not one ton of hay should be sold out of the province. The climate is ideal, the country is well watered and the necessary root and grain crops can be grown to make this province one of the great stock producing sections of Canada. Immediately such were to take place the soil problems would be remedied, the fertilizer question would be simpler and agriculture would be given a permanent status more quickly than in any other manner.

The selling of young stock to dealers, who take them out of the country, when hay is a drug on our market, cannot be too strongly condemned. Only mature cattle should pass out of the hands of breeders for the market. The demand for breeding sheep this year is one of the encouraging features of the situation, because never were sheep kept under more favorable conditions than this province offers. Production in 1918 may not be influenced much by giving added attention to cattle and sheep, but the food question will not cease even when war ends. The prospects for ready sales and good prices for livestock are all that could be desired for years in the future. Attention paid to pigs and the keeping of more brood sows in the spring of 1918 will assist in the food situation. Many are considering the killing of their poultry because of the high price of feeds. It is questionable if the profits from keeping poultry were any greater or as great in New Brunswick during pre-war conditions than to-day; the price of eggs is high and is soaring; the price of fowl is also high. Strenuous efforts are being put forth by the Livestock Division of Ottawa to cope with the feed situation and a car-load of chicken feed is to be forwarded shortly to this province. Before depleting any class of live-stock very serious consideration should be given, because it takes no more grain to produce a pound of pork or of chicken or to produce an egg to-day than previously, and the extra price offered for the product will offset the extra price for grain. Every farmer who raises poultry should consider raising the greater part of their food.

We as a people are apt to be stampeded to a degree, occasionally, and this is a time when careful thought and judgment should be applied to every problem. General Maurice stated that the battle in Flanders is at the same stage as Waterloo was at ten o'clock, which means that the man at home has a serious problem also.

Undoubtedly during 1918 the gardens will again be filled and the usual canning will be repeated. The extra acreage of beans will again be planted and if a good crop is had this year perhaps the acreage will be increased.

However, as the plans are now being matured, we would ask that consideration is given to the breaking up of some of the hay land this fall, if time will permit, in order that more cereals may be grown next season, and, in addition, in order that there will be less overripe hay to harvest, thus using labor upon crops that will give greater returns and be of greater value to the country.

The Provincial Department of Agriculture will give every assistance possible. Particular attention is being given just now to the purchasing of live-stock, emphasizing sheep.

ERADICATING THE COMMON WEEDS

The following notes on the eradication of a few of the commoner weeds art taken from a recent bulletin on weeds. Two points are generally emphacized in the work in question, viz., after harvest cultivation and the harrowing of grain in the spring when it is two or three inches high.

Mention should also be made of the far mimplements for weed destruction. Wherever the word "cultivation" is used in the following it may be taken to mean the use of a cultivator, not a disk harrow. The disk harrow is not an implement for destroying weeds, and except to germinate weed seed, say by following after the binder or for early spring work of the same kind it has no place in weed destruction. On the other hand, for weeds with running root stalks like couch, or sow thistle, the disk harrow by cutting up the roots merely aids these weeds in becoming more firmly estahlished.

Harrowing the grain crop from one to three times after it is up two or three inches high, has proved to be one of the best methods of keeping weeds in check, especially annuals, winter annuals and biennials. Usually these weeds come up a few days later than the grain. When the grain is about two inches high, the weeds are just in the two leaf stage, hence very tender, and very easily destroyed. Sometimes the heavy straight tooth harrow is too severe, and the tilting harrow will do the work of killing the seedling weeds just as well. This harrow can be regulated by the lever to go any depth desired.

Couch Grass

In bad places, plow shallow immediately after harvest. Work at intervals with a spring-tooth cultivator until winter sets in, gather any roots brought to the surface, place them in heaps and burn when dry. The following spring continue this cultivation and gathering until June 20th, then seed thickly to barley or rape. In working land to eradicate this plant do not use a disc, as this implement often cuts the running, underground root-stocks into short lengths, each of which will produce a new growth. In using the spring-tooth cultivator endeavor to keep the teeth perfectly clear of rubbish. Try to eradicate this weed when the sun is hottest.

Canada and Perennial Sow Thistle

(1) Plow shallow immediately after harvest. Work with the wide-share cultivator at intervals until late in the fall, then plow deep, turning as many of the roots up as possible. Leave in this state over winter. In the spring continue this cultivation with the same implement until June, then plow again deep, work well and seed thickly to barley. If this system of cultivation is carried out thoroughly for two years it will practically eliminate this pest.

(2) Cultivate early for summer-fallow with the wide-share, spring-tooth cultivator, and then plow shallow. Continue cultivation until July, then plow deeply. At this time of the year the sun is hottest, therefore roots brought to the surface will be killed by the heat. Cultivate the rest of the season or seed to winter rye. In using the cultivator see that the teeth are always kept clean, and do not attempt to work the land when wet. It is also well to work infested areas separately to avoid spreading the pest by distributing pieces of the rootstocks to clean parts of the field. It cannot be hoped to keep this weed in check if stray plants are allowed to go to seed These should be cut with a mower or scythe just previous to producing their seed, or when they first blossom.

Russian Thistle

Hand pull where only scattered plants occur. Where infestation is bad, summer fallowing is the only thorough system of eradication. If land can be worked early in the spring and seeded rather thick after good warm weather comes, the grain will smother the weed to some extent. Harrowing the spring grain is a good means of killing Russian thistle. It is very tender in the early stages of its growth. Growing fall rye is recommended where this weed is prevalent. Stock pasturing on the rye will eat the weed as readily as the rye, and any immediate plants left will be killed by the frost. Russian thistle is an annual.

Stinkweed

(1) Cultivate after the binder and in wet seasons. Cultivate again before winter sets in. Polw shallow the following spring and harrow immediately after the plow. When the seeds have germinated cultivate again and seed thickly to oats or barley. Harrow the grain about three times. Seed the land as soon as possible to timothy, brome or rye grass and leave in hay or pasture for several years.

(2) Cultivate after the binder; plow shallow late in the fall and work down. The following spring plow deeper, work down fine and allow the seeds to germinate. Then plow again still deeper, bringing up more seeds to be germinated and destroyed by surface cultivation. This work will be compelted by the latter part of July when the land should be seeded to fall rye, which can be pastured that fall and during the following spring and summer.

(3) Summer fallow. Plow at least twice; three plowings would give better results.

(4) Seed to timothy or other hay crop. The hay should be cut two or three times the first year; after that the grass will control the stink weed fairly well.

Sweet Grass

Mow and burn while the grass is in bloom in May to destroy the seeds. Then plow deeply to get below the rootstocks which may be brought to the surface by thorough cultivation continued throughout the summer. This will be made more effective by deep plowing as late in the fall as the frost will allow.

Wild Buckwheat

Cultivate immediately after harvesting, so as to encourage the germination of the seeds on the surface. The young plants will be killed by the frost. Harrowing the grain after it is up will kill the seedling plants. Thorough summer-fallowing, plowing before the plants go to seed, and cultivating with a duck-foot cultivator at intervals throughout the summer will rid a field of this pest.

Skunk Grass

In cases where it is growing in hay meadows or pastures, it should be cut before seeding, raked up and burned. It may be necessary to do this twice during the season, but if done at the proper time once it will practically eradicate this pest. Before breaking land infested with this weed it is advisable to burn it over the previous fall.

Wild Mustard

Hand pull and burn plants or small patches. When fields are overrun either of the following methods is recommended: (1) cultivate after harvest by using the disk or cultivator, or plowing shallow and harrowing. Winter will kill all the plants that grow. Cultivate again early in the spring and about June 1st seed to barley. After the barley is harvested cultivate immediately and follow the same procedure the next year. (2) Cultivate after the crop is harvested, then summer-fallow thoroughly the following year. The spring following, work well and sow oats reasonably thick and as early as possible. After the crop is up about two inches high, harrow once or twice and then seed to timothy, if possible, just before a shower and just before harrowing. Seeding with oats is preferable to seeding with barley, as it allows more air for the young timothy.

Tumbling Mustard

Harrow the grain when it is up a few inches. Summer fallow badly infested land and in the spring seed thickly to grain. Cultivate the stubblue after harvest.

Give attention to all old stack bottoms, edges of fields, roadsides, etc. Pasturing land badly infested with this weed with sheep, especially when the plant is young, has been found to be a sure remedy.

Wild Oats

(1) Plow shallow or cultivate immediately after the infested crop is harvested. In the spring as soon as a good growth has started plow again about four inches deep. This will bring a supply of seeds near the surface to germinate and to be destroyed as previously. Then about July 15th it should be plowed deep as possible, worked well and seeded to winter rye, which can be pastured the same fall and following spring.

(2) Start cultivation as stated in (1) but plow deep reasonably early the following spring. Work this well until June, then seed thickly to barley and oats. Cut for green feed. After green feed is harvested, cultivate or plow shallow. Leave in that state until spring. Work well until assured of good, warm growing weather, then seed reasonably thin to oats, also to timothy. Cut oats for green feed, and leave the land in timothy from two to five years.

MANAGEMENT OF DAIRY COW REQUIRES CAREFUL CONSIDERATION AT THIS SEASON OF THE YEAR

At this season of the year it will pay every dairyman to take an inventory of his home-grown feeds and the number of cows he expects to feed during the winter. He knows approximately the amount of home-grown feeds he will have, and whether his hay is good or indifferent. If it was cut early and properly cured it is good; but if it stood until too late it will not have nearly the feeding value of that cut at the proper time. He knows the amount of ensilage, fodder and straw he can properly use. He knows the number of cows in his herd that are worth keeping over for another year.

The profits from his farming for the coming year will depend in a large measure upon how he begins the year, or in other words, how he balances his feeds and the kind of cows he keeps on his farm. If he has nothing but corn fodder and timothy hay for roughage, it will pay him to sell the timothy and buy clover or alfalfa if he can; or, if not, he had better use his corn fodder to the best advantage possible and buy supplemental protein feed. Cows cannot do their best on timothy hay and corn fodder, as so many cows are fed. When these feeds make up the bulk of the roughage they should be fed with protein feeds that will make up the deficiency of milk-making elements. Protein is needed to build up the blood, bone and muscles. Every part of the body but the fat is made out of protein in combination with mineral matter and water. Corn fodder and timothy hay do not contain the needed amount of protein to enable the cow to give a heavy yield ofm milk. It is better to sell some of the cows than to try and keep the whole herd through the winter without plenty of corn silage and good clover hay. If we do not have clover, or alfalfa hay, we will have to buy some kind of supplementary feeds to furnish the necessary amount of protein. Young cattle will need practically the same kind of foods as milk cows. They are not laying on fat, hut growing. They need the kinds of feed that will keep them growing and hardy and enable them to make a good growth the next summer when turned out to pasture. It will be better to sell some of the timothy hay and buy a little bran, oats or oilmeal for the young stock and milk cows. Feed is high, but we must use it in proper combinations to maintain a suitable milk flow and keep young stock in a thrifty, growing condition.

In my experience producing milk for the city trade and buying new cows to replenish my herd, I have had an opportunity to study the methods of feeding and handling young cows in the farms where I go to buy cows. As a general rule I prefer to buy cows in the fall because I plan to make the bulk of my milk during the winter and because it is ushally possihle to buy good cows for less money in the cheese-producing sections, where I buy them from, than it is in the spring. Then again, we it is in the spring. Then again, we do not have enough pasture land to keep extra cows during the summer and autumn months.

It seems almost incredible in these days of advanced dairying that so many dairy farmers will neglect their cows during this critical time of the year. There is no possibility of any man making a success of the dairy husiness life if he allows his cows to fall away in milk yields and flesh condition during the autumn months. By keeping dairy cows in a drouth-stricken pasture, in a state of famine and starvation, so that you can see the full umber of ribs in their bodies, the very condition of the animal is changed before it goes into the barn for winter. Every time I have bought a bunch of these run-down cows late in the fall and tried to bring them to life I have lost money. Looked at from every side of the question the fall care of the dairy herd is one of the most important factors in determining the profits of the year. Any practical dairy farmer who has good natural pastures, can buy cows that are in comparatively low flesh during the spring and get something out of them during the summer, but the cow that goes into the barn at the beginning of the winter in a rundown, emaciated condition is about as bad a proposition as I have ever had to deal with on the dairy farm.

No cow is going to produce a satisfactory flow of milk when her system is rundown and her circulation and skin are out of condition. No matter how good feeds she has or how well they are proportioned, it requires four or five months to get her in good working condition and that means a loss of time and many dollars' worth of high-priced grain feeds before she can begin to yield any profit from them. We must have evenly-balanced cows as well as evenly-balanced rations to begin the winter with, if we realize a profit from our business.

The question of handling new cows that are brought onto the farm in the fall and fed heavily for milk production in the winter needs study and attention. As a rule I prefer to buy new cows from dairy farmers who keep their cows in good condition and do ot feed heavy rations of grain feeds. These new cows all have an individuality of their own and we should study them and get acquainted with it as soon as possible. By making inquiries as to their subsequent care and feed can we plan our management so as to get them settled down to the new conditions as quickly as possible. Then we can gradually change their rations until they can make a proper use of a full ration of grain and roughage without danger of upsetting their digestion.

The cow's habits and eccentricities depend a great deal upon how she has been treated and she should be watched at the start and given sensible treatment until she has settled down to the new order of things. It requires patience and common sense to buy new cows and get them settled down to their new surroundings and producing profitably, but the little extra care and thoughtfulness pays big returns.

Keeping the cows comfortable is another neglected point in the fall management of the herd. As soon as the cold nights come the cows should be kept inside, but I think it best to

allow them to run out whenever the weather is favorable in the daytime. The extreme cold winter weather and the comparatively short season of pasture life, make it desirable for the cows to be out and get all the good air and sunshine possible during the year. If we allow the cows, more particularly the young heifers, to become dry early in the fall, we are cultivating a habit that is very hard to overcome, for once a heifer or cow is allowed to go dry after being milked a few months it is very hard to make her continue the milking period for a longer time after the grain freshens. L. J. M.

HOW NEW BRUNSWICK FARMERS CAN HELP

Old sheep growers will find it to their advantage to hold what ewe lambs they have and breed them. Plan to double your wool and lamb crop next year. To those farmers who never carried any sheep, or who have gone out of the business, you will find it profitable to stock up with a bunch of ewes and a pure bred ram. To those people who have areas of uncultivated land, why not make it yield you something. You can make it do so by stocking it with sheep.

Why New Brunswick Farmers Should Grow Sheep

1. It is out duty to do so. We must help feed and clothe our Allies.
2. Progressive Agriculture depends on Livestock. We want our Province to come to the front as an Agricultural centre.
3. We have opportunities for sheep production, the rich valleys, the upland pastures, plenty of water, abundance of hay, and a great turnip country. Thus conditions are just right.
4. In these days of high priced labor, why not work along the line of least resistance. Sheep require less labor than any other class of livestock.
5. Money invested in sheep yields a fine dividend, the investment is small and the turnover quick.

Information Re Sheep Production

The Livestock Division of the Department of Agriculture stands ready to aid the farmer in any way. If he wants advice on any point, such as the best breed, where to locate foundation stock, probable cost, feeding, housing, flushing out, or any point that he is in doubt about, we will be glad to supply him with the information. Then we have some literature available for distribution which we will gladly forward upon request.

The new Dog Law offers protection from what has formerly been a serious drawback to the Sheep Industry. Men interested in this phase of it should study the new Dog Law and see that it is put into force in their parish.

For further information communicate with the Livestock Divison of the Department of Agriculture, Fredericton, N. B.

SHIPMENTS OF HORSES OVERSEAS

Since the Great War started in August 1914, the British Government have purchased in Canada and the United States, hundreds of thousands of Horses and Mules and shipped them overseas to France, Italy, Russia, and other Battle fronts, with practically no loss from sickness or disease,—the arrival of such a vast multitude of these noble animals in such excellent condition is largely attributed to the placing of a **Lump of Rock Salt** in the feed box of each horse on the Steamer.

Too little importance is given to the great health giving properties of this very inexpensive food, by our Maritime Farmers. Lump Rock Salt should be placed in a convenient place in the Manger of every horse and cow. Sheep, hogs, are equally benefitted by Rock Salt, and should always be provided wtih same. GANDY & ALLISON, North Wharf, St. John, N. B., have the best English Rock Salt always in stock and are in a position to make prompt shipments.

HOLD YOUR EWE LAMBS THIS FALL

A number of farmers complain that a spring lamb will not give a lamb crop the first year. They will if properly attended to. Just as soon as the lambs are weaned turn them into a field of after-grass. Keep them growing and thrifty and just before the breeding season flush them out with a little bit of grain. This will insure a lamb crop the next spring.

What an Amateur Has Done

Mr. W. C. Allison, of the firm of Manchester-Robertson-Allison, has a farm at Rothesay. Last fall he purchased six grade ewes and a pure bred Shropshire ram lamb. This spring he sheared an average of eight pounds of wool from his ewes and he had a lamb crop that averaged 1 5-6 lambs per ewe.

Wool sold for 60c, that is each ewe gave a wool crop valued at $4.80. Lambs are easily worth $10 a piece this fall, that is equivalent to $18.30 from each ewe for lambs, thus he received a total of $23.10 from each ewe for wool nad lambs. This is an exceptional case and the high net income could not have been secured if he had not given his stock careful attention. He flushed his ewes in the breeding season—hence the big lamb crop.

The Outlook for 1918

This year wool sold for 50c and 70c per pound. Next spring it will be just as high and very probably higher. Meat prices will hold strong for years to come. If you are dubious about wool prices next year just stop and think where the wool for two million American uniforms is coming from. If you still fear low prices, think of all the blankets and socks required for American and Canadian soldiers. If you fear low meat prices consider the huge standing armies that are, and will be training in the United States. It behooves us people who stay at home to provide these armies with food and clothing. We are face to face with a responsibility and an opportunity. Let us shoulder the responsibility and take advantage of the opportunity. We owe it to our Empire and we owe it to New Brunswick.

FINISHING HOGS ECONOMICALLY AT PRESENT FEED PRICES

In choosing feeds for fattening hogs choice is of necessity more limited than in the case of other classes of stock. With young pigs, where skim-milk and pasture are available, the use of the higher priced meals and concentrates may, in view of high price, be limited and full benefit derived from the former cheap, home-produced feeds. With a reasonable amount of wheat middlings, shorts or ground oats, good growthy pigs may thus be produced. For the finishing period, however, a more concentrated, more rapidly fattening ration is required. The swine-feeder at once asks, "How can I profitably finish hogs at present feed prices?"

Corn, barley, oats, middlings and shorts are possibly the five most desirable grains and meals for hogs in Eastern Canada.

With corn at from $88.00 to $90.00 per two,—barley, $60.00—oats at $65.00, approximately, and with the two former meals most difficult to procure,—some cheaper grain must be used in the finishing ration. Wheat middlings and shorts, even though high in price, ($45.00 approximately), must be relied upon for the major part of the meal ration. At the above prices middlings offers digestible nutrients at a lower net cost per ton than any one of the grains previously mentioned. By net cost is meant the total cost of the digestible nutrients, less their manurial value.

Oats or barley, one part, shorts and middlings, two parts, with some milk product or, lacking the latter, ten per cent oil meal, should supply as economical a growing ration as is generally available. With the likelihood of a material drop in the price of oats and the more problematical prospect of cheaper corn, when the new crop moves, the above ration could be improved. Corn, shorts, and oats, equal parts with skim-milk is an excellently balanced ration. The addition of corn, even as a small proportion, to the shorts, middlings, skim-milk ration would distinctly improve it as a finishing ration. Corn, must, however, reduce materally in price to be considered an economical hog-feed.

At the present time feed wheat, as procurable in Western Canada, forms an excellent hog-feed.

At the present time feed wheat, as procurable in Western Canada, forms an excellent hog-feed, as has already been well demonstrated. To the more central and Eastern sections this particular feed is not generally available. In many localities however, an elevator by-product known as buckwheat screenings, may now be purchased. Further information concerning the distribution of this material may be had from C. E. Austin, Mgr. Government Terminal Elevators, Fort William, Ont.

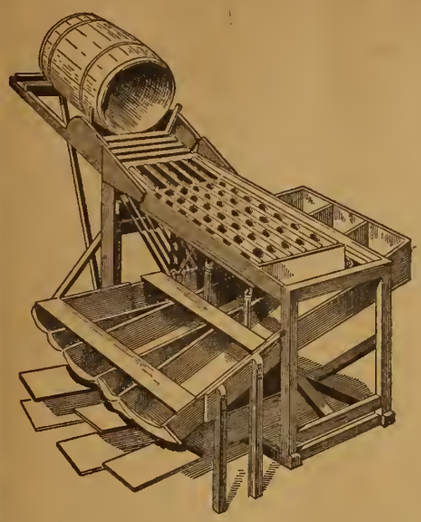
Analysis of this particular grade of screenings reveals the following constituents:—Wild buckwheat, 58 per cent.; broken wheat, oats and flax, 29 per cent.; weed seeds, 9 per cent.; chac, 4 per cent. In view of the weed seeds present it should be as finely ground as possible.

Experimental evidence, as acorded by swine feeding tests, at the Central Experimental Farm, would go to prove that this material is of considerable value. During the winter of 1914-15, in an experiment calculated to throw light on the value as a hog-feed of elevator by-products, as represented by the various grades of screenings, buckwheat screenings compared favourably with a standard meal and milk ration. Two of the rations compared were as follows:—No. 1. Shorts, three parts; oil meal, 1 part; plus skim milk. No. 2. Finely ground buckwheat screenings plus skim-milk. Without entering into the details of this test it may be stated that the pigs fed buckwheat screenings, while not so fat as those fed the regular meal ration and standing therefore slightly lower in total gains, stood first in economical production per 100 pounds gain. With the meal ration valued at $28.00 per ton (1915 prices) and the buckwheat screenings at $14.00 (nominal) the cost per pound gain was 4.7 cents in the case of the pigs fed the former and 2.7 cents for those fed the latter ration. On the actual prices paid or charged for meal, skim-milk and roots, and actual prices paid or charged for meal, skim-meal and roots, and figuring on the basis of total gains produced by the two lots, buckwheat screenings showed a comparative value of $27.60 per ton.

FOOD CONTROLLER'S ADVICE

Following are suggestions put forth by Hon. W. J. Hanna, Canadian Food Controller:—

1. Use perishable foods. Save garden truck that has been produced so abundantly this summer. Preserve, dry, can and store.
2. Eat more fish.
3. Substitute other cereals for wheat products—cornmeal, buckwheat flour, rice flour, and above all oatmeal.
4. Don't throw good food into the garbage can. $50,000,000 is wasted every year in this country by carelessness in the kitchens.
5. Preach once more the good old fashioned gospel of the clean plate. Do not let children food at their meals. Do not waste it yourself.
6. Organize. Various women's organizations are already active. Their leaders will tell you what to do. Get in touch with the workers in your own district.



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DAIRYING.

VALUE OF MILK IN THE HIGH COST OF LIVING PROBLEM

Economy in the diet does not always depend upon limiting the use of certain foods, but sometimes it is a question of actually increasing the use of foods which furnish nutritive material at relatively low cost. Milk belongs to the latter class, and the housewife would do well to study its food value, and decide whether her family is using as much as it should. The average person in this country uses only a little more than a half pint of milk daily, nnd this quantity can very profitably be increased when safe milk is available.

Many people think of milk only as a beverage, but, if they understood that it is in reality a nourishing food, they would increase their daily allowance.

We eat foods for two main reasons: First, to renew body wastes and promote growth by forming new tissues and fluids, and, second, to supply energy for carrying on body functions. Milk contains the body-building materials (protein and mineral substances, such as lime and phosprorus).

The following table, compiled by specialists of the U. S. Department of Agriculture, shows the quantities of various foods needed to supply as much protein or energy as one quart of milk:

Protein

1 quart of milk.
7 ounces of sirloin steak.
6 ounces of round steak.
4.3 eggs.
S.6 ounces of fowl.

Energy

1 quart of milk.
11 ounces of sirloin steak.
12 ounces of round steak.
8½ eggs.
10.7 ounces of fowl.

Another method of comparison is shown by the table below, in which the relative value of certain foods, as economical sources of protein, is given:

	Is as cheap as	
Milk at	sirloin steak at	Or eggs at
7c a quart	16.3c a pound	17.6c a doz.
8c a quart	18.6c a pound	20.1c a doz.
9c a quart	21.0c a pound	22.6c a doz.
10c a quart	23.3c a pound	25.1c a doz.
12c a quart	27.9c a pound	30.2c a doz.
15c a quart	34.9c a pound	37.7c a doz.

According to this table, if milk is selling at 10c a quart, sirloin steak must sell as low as 23.3c a pound, and eggs at 25.1c a dozen, to supply protein at equal cost.

To Supply Energy at Equal Cost

When milk is	Sirloin steak must not be more than	Eggs not more than
7c a quart	9.9c a pound	9.3c a doz.
8c a quart	11.3c a pound	10.6c a doz.
9c a quart	12.8c a pound	11.9c a doz.
10c a quart	14.2c a pound	13.2c a doz.
12c a quart	17.0c a pound	15.9c a doz.
15c a quart	21.3c a pound	19.8c a doz.

It can be seen, therefore, that milk even at 15c a quart, is a cheap source of energy as compared with sirloin steak and eggs.

In comparing foods it is necessary to consider both the protein and the energy furnished. Neither one alone can properly be used as a basis of comparison, nor is there any correct way to reckon the value of a food by considering the total amount of nutritive elements.

It is very difficult to compare foods on the basis of the mineral matter they contain, but all physiologists agree that milk is extremely valuable from this standpoint. Indeed, it is the food prepared by nature especially for the growth and development of the young. A quart of milk a day is a good allowance for a young, growing child.

In addition to being an economical food, milk is usually easily digested, and requires no cooking or other preparation for the table. Specialists of the department have also found that it is digested better when taken with other foods.

There the innumerable ways to use milk in cookery, such as in puddings, blancmange, soups, chowder, "junket," and many others. In all these ways it is both appetizinz and nourishing.

NO FAULT OF FEED BILL

There seems to be an organized effort on the part of agricultural press and the farmers' organizations, to lay all the blame for high-priced milk on the feed bill, and very frequently an effort is made to blame the high-priced feed bill on the feed merchant.

Now, we think, in justice not only to the feed merchant, but the feed trade in general, that such statements should not be printed without proper investigation.

We deny that there ever was a time when the feed bill was larger than the milk check, unless the dairyman was giving feed to cows that should have gone to the butcher rather than be kept for dairying purposes. The truth of our statement can readily be figured.

It takes one pound of grain or feed to three or four pounds of milk. Rarely does a dairyman feed heavier than one to three, unless it is to very high testing cows that might get one pound of grain to 2½ pounds of rich milk.

Even with feed at $60 per ton, or 3c a pound (which we think is higher than has ever been charged), that would mean that the dairyman was not getting over $1 per 100 pounds for his milk. We have never heard of milk selling so cheap that the dairyman could not get even $1 per 100 for it.

The United States Department of Agriculture shows that for 100 pounds of milk, it requires on an average 33.4 pounds of grain, together with roughage, silage, etc. This grain, figured at $50 per ton, comes to 83½c, so that according to the United States Department of Agriculture the cost of the grain for 100 pounds of milk was 83½c. The total cost of 100 pounds of milk, including labor and overhead charges, such as interest and insurance, came to $3.33 per 100 pounds of milk, so that the cost of the grain was about one-quarter of the total.

It may interest you to read these figures, set forth in tabulated form, as furnished by the United States Department of Agriculture:

Cost of Producing 100 Lbs. of Milk	
33.4 lbs. grain at $50 ton	$ .835
44.6 lbs. of dry roughage at $17.50	.7805
145.3 lbs. silage at $10	.7265
Pasture	.087
3½ hrs. man labor at 15c	.525
½ hr. horse labor at 20c	.10
Total	$3.054
Insurance, interest, etc.	.276
Total	$3.33

The above figures are based on a cow giving 5902 lbs. of milk yearly. The amount of production is comparatively low, and the figures of cost should be materially reduced for a higher producing cow.

In view of all the agitation concerning the high prices of feed as bearing on the cost of milk, it is interesting to note from the above table that even if the cost of the grain were cut in two, down to $25 per ton (which is lower than feeds have sold at for a long time), it would only succeed in reducing the cost of milk 42c per 100 lbs., or a little over ¾c per quart. Therefore, it is apparent that the high price of feed can only be reasonably charged with ¾c per quart of the increased charge for milk, and that is the full extent of the benefit that can inure to consumers if the price of feed were reduced by one-half.

We might incidentally point out that it is probably hopeless to expect any reduction in the price of feed to such a basis as $25 per ton, unless our big corn crop can be marketed at from 50c to 60c per bushel. The controlling influence in the price of feeding stuffs is the value of corn, and with new corn quoted in Chicago at around $1.20 per bushel, or over $42 per ton, it is hardly reasonable to expect that other feeding stuffs will decline materially.

The Larrowe Milling Co.
Detroit, Mich.

MILK THE CHEAPEST ANIMAL PRODUCT

In the campaign being carried on in the United States to save food and reduce living expenses, some interesting facts are being brought out regarding the relative values of the different foods. For instance, the University of Missouri College of Agrichlture points out that 1 quart of milk is equivalent to ¾ of a pound of lean beef, 8 hen eggs, 2 pounds of chicken (including bones as bought), or ½ pound of white bread. In other words, a glass of milk will furnish as much food as two whole eggs; or a meal containing 2 pounds of chicken would have been fully as nutritious if a quart of milk had been substituted for the chicken. When milk is 10 cents a quart, chicken 25 cents a pound, and eggs are 40 cents a dozen, 10 cents worth of milk equals in food value, 50 cents worth of chicken or 26 cents worth of eggs.

A still more striking way of expressing the value of milk is to state what one could afford to pay for milk in order to get the same quantity of

ASSAM Teas for Economy

Assam teas are the strongest and richest grown. It is of these teas that Red Rose Tea chiefly consists. That is why it yields the very large number of 250 cups to the pound—at the cost of about a cent for five cups, and every cup rich, strong, delicious tea.

Kept Good by the Sealed Package

643

Children Had Eczema
Doctors Failed to Cure

Two Letters Which Prove the Efficiency of Dr. Chase's Ointment as a Cure for Eczema.

Fortunate are the mothers who know the virtues of Dr. Chase's Ointment, for there is no treatment so suitable for use after the bath to relieve irritation and chafing and to thereby prevent eczema and similar skin diseases.

Mrs. W. L. Barnes, Timmins, Ont., writes:—"I want to tell you about the case of my little boy, who had baby eczema when he was three months old. It started on the top of his head, on his forehead and around his ears. The doctors failed to do him any good, so I tried Dr. Chase's Ointment on the recommendation of a friend, and in a month's time the child was entirely free of this disagreeable skin disease. He is now four years old, and has never had any further trouble from ailments of this kind. I also have great faith in Dr. Chase's Nerve Food, and believe that it cannot be beaten as a restorative for pale, nervous women."

Mrs. George McNair, River Charles, N.B., writes:—"We use Dr. Chase's Ointment in our home, and would not wish for anything better for cuts, burns and bruises. A few years ago a friend of mine, whose baby was terribly afflicted with eczema had her child treated by their own family physician, but the little one got no better. They tried several remedies, but they all proved useless in this case. Upon the advice of a neighbor they got Dr. Chase's Ointment, and before the first box was used the child was completely cured. I can also recommend Dr Chase's Nerve Food to suffering friends who I know will be glad to learn of something to relieve their nervous trouble. You have my permission to use this letter for the benefit of others."

Dr. Chase's Ointment, 60 cents a box, all dealers, or Edmanson, Bates & Co., Limited, Toronto.

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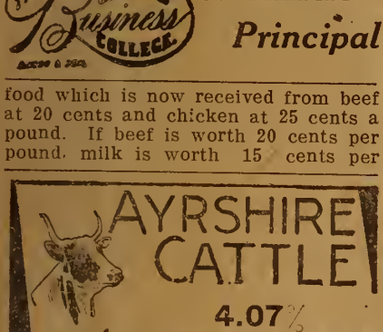
food which is now received from beef at 20 cents and chicken at 25 cents a pound. If beef is worth 20 cents per pound, milk is worth 15 cents per quart. If chicken sells for 25 cents per pound, milk is worth 50 cents per quart. If one can afford eggs at 40 cents a dozen he can afford to pay 26 cents a quart for whole milk.

Cream cheese is just about six times as concentrated as milk, which means that one pound of cheese is equivalent to 2 dozen eggs or about 2 pounds of beef. Good cheese at 40 cents a pound is about 5 cents cheaper than beef at 20 cents and 80 cents cheaper than eggs at 40 cents a dozen.

This analysis is sufficient to show that milk at ordinary prices of 8 and 10 cents a quart is one of the cheapest foods available. Bread is cheaper and makes a very good meal with milk. Milk is not only cheap, but it contanis some substance, present in butter but lacking in lard and oleomargarine, which stimulates growth of childres. Every growing child should receive at least 1 quart of milk a day.



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W. F. STEPHEN, Secretary

Canadian Ayrshire Breeders' Association

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Gentlemen,—I have used MINARD'S LINIMENT on my vessel and in my family for years, and for the every day ills and accidents of life I consider it has no equal.

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CAPT. F. R.DESJARDIN,

Schr. "Storke," St. Andre, Kamouraska.

WHAT IS A STARTER?

The ripening of cream is simply the development of acid in it, in other words, ripening is just the souring of the cream. At a certain stage in the development of the acid cream will churn to best advantage, and in creamery work this rharacteristic is taken advantage of, the cream being tested during the ripening process by means of the acid test and churned when the proper percentage of acid is present. This, however, is not possible under farm conditions, the taste, smell and appearance of the cream being used as a guide in determining whether or not it is hipe enough to churn.

A starter is a quantity of milk in which the particular organism or germ that causes cream to sour or ripen has been allowed to develop. A starter is made either by taking some fresh, clean milk and permitting it ti sour under favorable temperature conditions, about 75 degrees F., or by using commercial starter which may be purchased from most creamerf supply houses. If cream has been pasteurized, as is the case where a high-grade, long keeping creamery butter is made, it will contain none of the ripening organisms or any other, so that the addition to it of the particular organism that causes the formation of lactic acid will cause it to develop that acid and nothing else. In this way it is possible to make a butter of very high quality that will geep good for a long time. The starter is added to the cream some hours before churning and the development of the acid watched and checked at the proper stage.

PREPARE DRY COW FOR HER LACTATION

Every dairy cow, in order to give the best results, requires a rest of six weeks or two months between lactations. During this time she should be prepared for her year's work, her tissues built up, and her digestive tract rested and cooled as much as possible. Of course, nourishment must be supplied for the growing fetus.

If the cow is dry during the summer or early fall she will need very little extra care if she is on good pasture. A pasture separate from the general herd is advisable as there is then less danger of injury. During this period no more grain than is necessary should be fed, as it allows the digestive system of the cow to rest, but a few pounds of oats and a little bran will often be found advisable. If the cow is in poor condition a little corn may be added, but it is not advisable to give much of such heating feeds. If it is necessary to flesh up the cow this should be done gradually.

If the dry period occurs in winter the ration should consist of 20 to 25 pounds of corn silage with a liberal allowance of legume hay and a grain ration consisting of a mixture of 3 parts ground oats, 2 parts wheat bran and 1 part oil meal; the amount of the grain ration being governed by individual requirements.

During this period the ration should be laxative in nature and should contain little of such heating feeds as corn, and feeds such as cottonseed meal and timothy hay should be avoided.

A few days before freshening, the grain ration should be considerably reduced and at this time a mixture of 2 parts bran and 1 of oil meal is excellent, as it keeps the bowels laxative. If this mixture does not give the desired effect a dose of 1 quart of raw linseed oil or 1 pound of epsom salts should be given. Freedom from milk fever and other post-parturient troubles is in large measure due to the care with which the cow is handled and fed just previous to freshening.—Iowa Circular 34.

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You can "do your bit" towards helping Britain and the Allies win the war.

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will keep your fowls healthy and vigorous. It starts them laying early and keeps them "on the job" all winter.

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PRATT FOOD CO. of CANADA, Limited,

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MILKING THE COW

As a discussion has occurred between some friends as to the proper way of milking a cow, I would be much obliged if you would explain whether it is right to milk the two fore teats together and then the back ones, or to milk the side teats together? Also which way makes the cow's udder look to contain equal quantities of milk in each of the four parts. B. E. M.

So far as we know, no scientific investigations or exhaustive experiments have been made regarding the best method of milking, and in the absence of this evidence every man can think and practice what he thinks best. Some milk first the two front teats, others the side teats, and again others the front and back on opposite sides. Some also think that only a small quantity should be drawn from each teat at a time, thus bringing all along toward completion nearly at the same time. There are those, too, who think that by milking the lightest quarters first they will improve and become equal to the others, but this has not been demonstrated to the satisfaction of the public. Every man that milks thinks his way the best—in fact there is probably little difference which way it is done so long as one gets all the milk.

Manipulation or kneeding of the udder is no doubt a good practice, especially a light quarter, and will likely give better results than particular attention to the order in which the milk is drawn.

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LIVE STOCK.

FARM MEDICINE CHEST AND PROPER USE OF ITS CONTENTS AS FIRST AID

The breeding, feeding and maintenance of horses, cattle, sheep, swine and poultry on the farm necessitates the keeping of a supply of simple drugs for first aid treatment in time of sickness. While the trained veterinarian should and no doubt will be employed wherever possible for all serious attacks of disease, the farmer must be prepared, and know how to relieve sick and suffering animals when emergency requires. Often the veterinarian cannot come "right way" and at such times a dose or two of appropriate medicine may save life, or prevent an attack from going too far before the veterinarian can prescribe. For these reasons we shall present here a list of needed drugs and offer a few hints as to their proper use.

Storing the Drugs

The drugs to be mentioned should be kept out of the way of children and where they will not freeze or be exposed to direct sunlight. Each should be labeled, and if poisonous, that, as well as the name of the drug, should be plainly shown upon the label. Keep powdered drugs in tightly closed Mason jars, else they will soon lose their strength. Fluid medicines may be kept in the original bottles or in stoppered bottles, such as druggists use. Also keep on hand a few clean quart, pint, half-pint and smaller bottles with new corks for each, and some small tin boxes or wide-mouthed bottles for ointment. There will be needed, too, a glass graduate for the measuring of doses, scales for weighing, a galss funnel for filling bottles, a medicine dropper, and a small mortar with pestle for mixing and powdering drugs. A flour sifter also comes ni andy, as does a slab of plate glass and a spatula for the making of ointments. Experts also keep on hand some large and small gelatine capsules for the administration of drugs.

Doses of Medicine

In giving medicines the following measures will be found approximately correct:

1 teaspoon holds about 1 dram.
1 dessertspoonful halds about 2 drams.
1 tablespoon holds about ½ ounce.
1 wineglass holds about 2 ounces.
1 tea or coffee cup holds 5 to 8 ounces.
1 tumbler holds about 8 ounces (½ pint).

The drugs to be kept on hand may well be listed according to their special work or purposes as follows:

Blister

For a stock supply melt together three pounds of lard and one-fourth pound of yellow beeswax, then stir in one pound of powdered cantharides until cold. Keep in a tightly closed jar. To strengthen for use on bony growths mix at time of use one dram of biniodide of mercury with two ounces of this stock blister.

Colic

Every horse owner should keep on hand a few drenches for spasmodic (cramp) and flatulent (wind) colic. They may be purchased from the veterinarian or druggist. The farmer cannot, under the provisions of the Harrison Act, buy laudanum, morphine, cannabis Indica, or chloral hydrate, commonly used in such preparations. He can, however, give relief in many cases by use of the following simpler drugs:

Alcohol, brandy, gin and whisky, useful as stimulants in colic, chill and heat exhaustion. Dose ½ to 2 ounces of alcohol; 2 to 8 ounces of the other stimulants.

Aromaic spirits of ammonia. Dose 1 to 8 teaspoonfuls in water as a stimulant and to stop formation of gas. Very useful in colic and in heat exhaustion.

Sulphuric ether. For pain and as a quick diffusible stimulant. Dose 1 to 2 tablespoonfuls in a pint of water. Inflammable. Keep away from an open fire or light. Along with it give, in flatulent colic, 2 to 4 level teaspoonfuls of

Salicylic acid. Excellent when there is fermentation of gas, or give

Soda hyposulphite, 4 to 8 tablespoonfuls dissolved in water before adding ether. With these may be given with good advantage a teaspoonful each of fluid extracts of nux and ginger, and essence of peppermint, or 2 tablespoonfuls of the tinctures.

Turpentine, of which at least a quart should be kept on hand, is useful in colic, 2 to 4 tablespoonfuls being given in 1 to 1½ pints of raw linseed oil. It is most beneficial in wind colic.

Fever

Keep on hand powdered saltpeter to give for fever, founder, lymphangitis (milk leg), and garget. Dose, 1 to 4 teaspoonfuls in water or feed. In founder give 2 to 8 tablespoonfuls 2 or 3 times daily. Veterinarians also give small doses of tincture of aconite. This is a dangerous poison and should have a place only in the medicine chest of an expert.

Indigestion

In addition to destroying worms, having the teeth put in order by a veterinarian, and being more careful in feeding, the following drugs will be found useful:

Chalk. In the powdered or prepared form in 1 teaspoonful to 1 tablespoonful doses for young or old scouring animals. Give in boiled milk or gruel combined with ginger, soda, rhubarb, alum, magnesia, or bismuth in 1 teaspoonful doses. A lump of chalk placed in the calf pen is useful as a preventive of scours.

Charcoal. Powdered wood charcoal may be given freely to any animal that has indigestion. It helps hogs wonderfully, also is useful in wind colic.

Ginger and gentian roots, powdered, are valuable in condition powders and for indigestion, as tonic appetizers. The dose for horses and cattle is 1 to 2 teaspoonfuls. Sheep and hogs take 20 to 60 grains at a dose. The tincture or uid extract also is given in drenches or mixtures of liquid medicines. Dose of fluid extract, 1 teaspoonful; of tincture, 1 to 4 teaspoonfuls.

Lime. Allow hogs free access to slaked lime, wood ashes and charcoal. Give lime water freely in milk to calves or foals suffering from indigestion or scours. Slaked lime also is useful as a drying powder dusted upon the navel or a wound.

Nux vomica (poison). The powdered drug, tincture, or fluid extract may be given in weakness cases, chronic indigestion, constipation, or paralysis, under direction of the veterinarian who may personally prefer to give strychnine, the alkaloid of nux.

Physics

Castor oil. Used chiefly for young animals, especially calves and foals, when constipated, or attacked with scours. Shake up in milk. Dose, calf and foal, ½ to 4 ounces according to age and size. Give an adult horse or cow 12 to 16 ounces as a purgative.

Epsom salts. The most popular purgative for cattle. Does 1 to 2 pounds dissolved in 3 pints of warm water. Add ½ to 1 cupful each of salt and blackstrap molasses. Give very slowly and carefully from a long-necked bottle. Sheep take 2 to 4 ounces in water and hogs the same dose in slop.

Glauber salts (sulphate of soda). A saline purgative used in the same way as epsom salts, but especially valuable when the liver needs stimulating. Full dose for horse or cow 12 to 24 ounces dissolved in 2 or 3 pints of warm water. Alternative dose, for the liver, 2 to 4 ounces once daily.

Linseed oil (raw). Boiled oil is poisonous. Dose for horse and cow 1 to 2 pnits, sheep and swine 4 to 8 tablespoonfuls. The best physic in constipation or stoppage of the bowels. Better than an aloes purgative ball in colic of the horse. Small doses mixed in mash or slop are also useful for relaxing the bowels.

Keep on hand fresh lard, or lanolin, and ½ pint each of fluid extracts of poke root and belladonna. Mix 1 teaspoonful of each of these with 2 tablespoonfuls of lard or lanolin to rub on the udder in garget. In severe cases add 1 teaspoonful of turpentine. Iodine ointment also will be needed for swellings and obstinate sores, and glycerine in which a little tannic acid is mixed for chaps and cracks; or balsom of Peru or compound tincture of benzoin for sores.

Worms

For the destruction of worms in horses will be needed sulphate of iron (copperas), sulphur and salt. Give a level teaspoonful of copperas and 2 each of salt and sulphur night and morning for a week, then stop for ten days, then repeat the treatment. Omit iron for a pregnant mare. Keep gasoline for killing worms of sheep. Turpentine also is useful. It, or copperas, also is given to wormy hogs.

Wounds

The medicine chest should contain, for disinfecting (germ destroying) purposes, a bottle of bichloride of mercury tablets. Directions for use are given upon the label. One pint bottle of carbolic acid in addition to a one-gallon can of coal tar disinfectant, such as zenoleum, kreso, chloronaphtoleum, etc. The coal tar disinfectants have a hundred uses on the farm for wounds and disinfecting purposes. Directions for use are given on the label of the can.

White lotion for wounds is made by mixing 1 ounce of acetate (sugar) of lead, and 6 drams of sulphate of zinc in 1 pint of soft water. Label the bottle "poison," and shake well before use. Always keep lead and zinc on hand for this purpose.

Sulphate of copper (blue stone) also will be needed for dusting on proud flesh and for use in lotions for sores. foul in the foot, foot rot of sheep, and ring worm.

Tincture of iodine must be found in every medicine chest for use on wounds and swellings and for ringworm. The ointment, too, is much used for swellings, garget, and troublesome sores.—A. S. Alexander, M.D.C.

REGAL FLOUR

Ensures Bread that is Fine and Porous of Texture and Full of the Nourishment for which Manitoba Hard Wheat is Famous - - - - -

Equally Satisfactory for Pastry, Cakes and Puddings.

THE ST. LAWRENCE FLOUR MILLS CO. LIMITED
REGAL FLOUR
196 LBS.

"DRYING OFF" HIGH PRODUCING DAIRY COWS

While some cows dry up too easily, there are others that have the habit of "hanging on" even after the dairymen would have them "let go." The quality of persistency is a fine thing in a dairy animal. Many a cow is unprofitable because she drys up too soon, therefore it is greatly to be prepared to have a cow so persistent in her milk flow that it is with difficulty one is able to dry her up.

In "drying off," one of these difficult cows plenty of time should be allowed for that purpose. It is not possible to manage this matter quickly, with some individuals without injury. Nature's processes are slow and she positively refuses to be hurried. She has her own methods, they are always workable and will succeed if intelligently followed.

The first thing to do in persuading a high producer to "let go" on her lactation period is to shorten up on the food supply. No cow can give milk long without a supply of suitable food hence a ration altogether opposed to milk production should be adopted. Instead of giving succulent food such as grass, ensilage alfalfa,

Dizzy and Faint Spells

Are Warnings of Heart Trouble That Should Be Heeded.

Those feelings of weakness, those dizzy spells and "all gone" sinking sensations, which come over some people from time to time are warnings that must not go unheeded. They indicate an extremely weakened condition of the heart and a disordered state of the nerves.

Those who are wise will start taking Milburn's Heart and Nerve Pills before their case ɔccomes hopeless. They have no equal for strengthening the heart and invigorating the nerves.

Mrs. Emil Brooks, Upper Gagetown, N.B., writes:—"All last summer and winter I had dizzy and weak spells, headaches and fainting and blind spells. A friend recommended Milburn's Heart and Nerve Pills to me. I had only taken two boxes when I found great relief. I highly recommend them to all who suffer from heart trouble."

Milburn's Heart and Nerve Pills are 50c. per box at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

roots, etc., and concentrates with a high percentage of protein such as oil meal, cotton seed meal, gluten, bran, oats, etc., a change should be made to timothy hay, straw and food containing less succulence and protein to those with a higher analysis of curbo-hydrates, of course a limited quantity of fattening foods to keep up energy and prevent the cow from falling off in flesh should be given for it is bad policy to allow a cow at this time to get thin. This is her time for building up for the next lactation and if she gets thin now valuable time will be lost and unless a long term from being dry has been in one's mind she will just be able to regain the lost ground and still have time to get in proper condition for freshening.

Another thing that should be carefully guarded against is sudden changes passing from one class of foods to another should be done gradually. If this is not observed there is great danger of bringing on digestive complication or other troubles that can easily be avoided by the exercise of care and reasonable judgment.

Another important matter at this time is the milking, just what to do will depend upon the individuality of the cow under treatment, both as to the quantity and quality of the milk she is giving. If her milk is pretty rich she will have to be milked oftener than would be the case if it were poor, on account of the tendency of the former to get stringy or thick thus interfering with emptying the udder occasionally, as should be done to make sure there is no lump of curdled milk left there to decay and cause inflammation, thus subjecting the whole udder to danger. If a cow's milk is quite thin in butter fat at the time of drying off, quite a large quantity may be left in the udder without much danger of trouble, hence these things should be carefully noted as "drying off" progresses.

A good way is to drop one milking and at the next milk clean. If there are no lumps and the mess is not great enough to cause uneasiness two milkings may then be omitted and again the udder milked clean. If no inflammation occurs and the quantity is gradually growing less the time between milkings may be lengthened after each milking until the cow is fully dry. At each milking, however, the udder should be entirely emptied as it is the only way to be sure that there are no lumps of coagulated milk, stringy cream or inflammation in the udder. If at any time the udder suddenly is found to contain any lumps or other indications that inflammation is present, the cow should be milked twice a day, at least, until these entirely disappear, when the process of drying off may again be continued.

Even after a cow is apparently dry she should not be allowed to go long without a careful examination of her udder being made occasionally, to make sure that all is well. Neglect to observe this precaution has resulted in the loss of many quarters and valuable cows. The cow's udder is a very delicate mechanism and will not stand any considerable amount of abuse, hence great attention should be given it at all times to preserve it in its best form, for if one or two of the quarters are destroyed as the result of carelessness or other forms of abuse it practically means that the animal will have to be sacrificed. The loss of a good cow means a great deal in these days not only to the owner but also to the community in which he lives and the empire also.

Be careful about drying off the cows now, so that when the next freshening occurs all teats and quarters will be in good form for beginning a useful season's operations, not only for the benefit of your pocket but also for the protection of 'Home and Native Land."

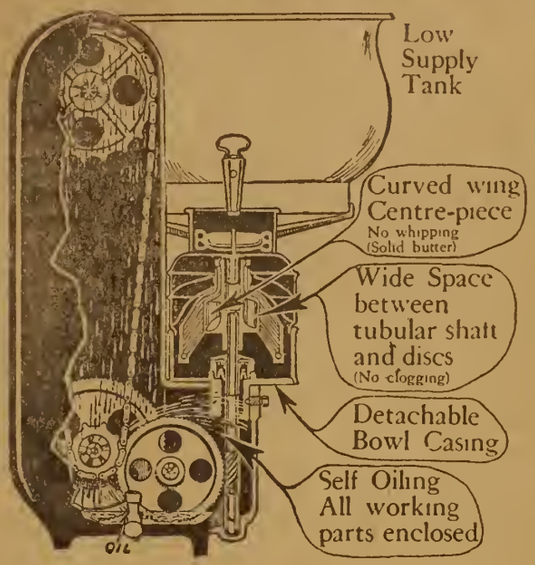
More Cream and Better Quality

The Standard not only skims closer than other machines but it gets the richest, highest quality cream. Ordinary machines will not do both. "During the past two years," writes one of the principal Creameries of Canada, "the **quality of our products has risen** in a surprising way, and we can obtain a **higher price for our butter.** The reason for this is undoubtedly due to the **increase in the number of**

Standard

Cream Separators in use among the dairymen supplying us with cream.

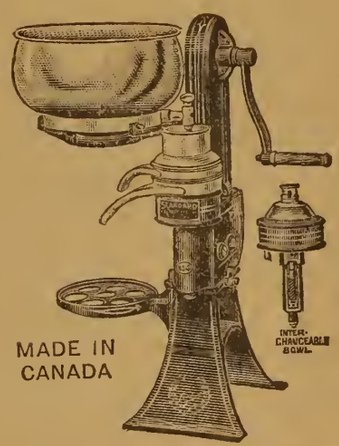
On page eleven of our latest catalogue you will find positive proofs, repeated over and over again, that the Standard skims down to one-tenth pound of butter-fat per 1000 pounds of milk skimmed.


Low Supply Tank
Curved wing Centre-piece
No whipping (Solid butter)
Wide Space between tubular shaft and discs
(No clogging)
Detachable Bowl Casing
Self Oiling All working parts enclosed

There are no milk or cream tubes to clog. The simple Standard bowl can be taken apart and quickly cleaned. The discs do not clog, because there is an extra wide space between the tubular shaft and the discs. The self-oiling system adds to the perfect cleanliness and to the sanitary features of the Standard.

Finally the curved wing bowl centre, an exclusive Standard feature, distributes the milk to the discs evenly and without whipping; the globules of butter-fat remain intact and the result is firmer, superior butter—more profits.

All these splendid advantages; besides many other exclusive features, are fully described in our literature. Write for it today.



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THE HORSE

WEANING THE COLT WITHOUT LOSS TO ITS FOAL FLESH

To keep the colt growing without interruption during weaning time and afterward is a most important consideration in producing horses profitably. A good horseman aims to replace the milk that the colt has been accustomed to secure from its mother. He tries also to reduce the worrying and fretting of the colt to a minimum. To wean a colt appears to be a simple matter. It is simple as many do it; yet the very olw degree of success that is shown on many farms by their unthrifty colts is evidence that there is something wrong or that there is something lacking. Often in a few weeks during weaning time the youngster changes from the growing, sleek, milk-fat colt to a stiffhaired and unthrifty, stunted individual. The colt if properly cared for, need lose but little of his flesh, bloom and spirit.

Grain to be Fed

Grain must be used as the milk is taken away. It is necessary that the colt has been taught to eat grain before weaning is attempted. Oats have always been preferred by horsemen for young colts. They are undoubtedly superior to any other single grain. The colt likes a mixture or a variety of grains and will thrive best on such a ration.

Hay should be provided in plenty. Doubtless alfalfa or clover is the most desirable for young growing colts. Both grain and hay should be of the very best quality. If it is at all possible to furnish succulent grass for the colt, it should be done. This is a big factor in preventing any check in the growth of the youngster.

Company of other Colts

Naturally the colt will miss the company of his dam. If he has been accustomed to stay in the stable or yard while the mother is out at work there will be less fretting on that account. If the youngster has followed the dam constantly and has never been kept separated from her, he should be broken gradually to stay away from her if it is at all convenient to do so.

If there are several colts on the farm it is best to wean all of them at the same time. The youngsters love company and if there are two or more of them together they will fret and worry much less.

The stall or pen where the youngster is confined should be such that he cannot injure himself. The door and fence should be high enough so that he will not try to jump out. Nothing but a clean and comfortable place, with plenty of sunshine and proper ventilation, should be used for the colt during weaning time. It should be made possible for the colt to exercise freely every day.

Management of the Dam

Just before weaning it is best to change the dam from succulent pasture to dry feed. If she is being fed grain the amount should be reduced to a minimum. This will have a tendency to reduce the milk flow. The colt should then be allowed to suckle only two or three times per day instead of being with the mother all the time or at least over night. It may be necessary to milk out the mare occasionally for a few days, in the case of large milk produrers and where there is a tendency for the udder to swell. Having done these things it will be lomparatively simple and easy to keep the colt away from the mother entirely without injury or handihap to either the dam or her foal.

Having made the rhange slowly and gradually the youngster will not miss the milk greatly. He wil eat grain and hay, will take exerlise and will grow withoht any setback. If he is kept healthy, thrifty and growthy, the very best of results will follow.

H. E. McCARTNEY.

CARE AND SKILL IN FEEDING HORSES

Some persons feed much more to their horses than others, and get no more work done. Very often the horses fed the heaviest are not worked the hardest, and are not the fattest. One man told recently of changing his way of feeding, and he found that he got better results with a smaller amount of feed.

Feed is so high-priced now that this man found by cutting the amount of grain squarely in two that his horses have done as much field work as ever, and are in as good flesh as usual. His horses eat a little more hay than under the old plan of feeding.

There is such a thing as getting a horse accustoned to eating an exorbitant quantity of feed. The experienced horseman generally detects the symptoms of overfeeding, but a man who habitually feeds and handles only his own horses in his own way may go on for years with a method that is wasteful or even actually injurious to the horses.

Probably it is these differences of management that give some farmers the reputation for continually having bad luck, accidents, colic, and other trouble with their horses, while some of their neighbors never seem to have any unfortunate incidents about their horses. Many farms seldom have a horse sick, sore, or lame. It depends much on the management, and the most important single item is the sensible feeding.

STUNTED WEANLINGS—POOR YEARLINGS

It is a common thing to see yearling colts turned into spring pasture, their stunted condition showing clearly that they have done poorly through the winter, and the retaining of their long winter coats showing that they do not make much use of the pasture until the summer is almost gone. A search for the cause of this condition reveals that their growth is checked when the foal is weaned along about October. As a result of a setback at that time, they are poor eaters during the winter and are stunted when they go out to pasture in the spring.

A little care at weaning time will prevent this trouble and do away with the possibility of a weakened animal later on. If the colts have a small amount of grain to nibble during the summer while they are with their dams, a complete separation will not be likely to cause any serious setback, because they will not miss the milk so much. Most of the trobue, when trouble occurs, is due to the fact that the foal is not accustomed to eating grain.

When ouce separated, the dam and foal need to be kept apart; otherwise, the work will have to be done a second time, and the colt will fret more than at first. Weanlings should be placed in clean, dry well-ventilated quarters, where they cannot injure themselves. A box stall in the barn may be used, if the flies are not bad.

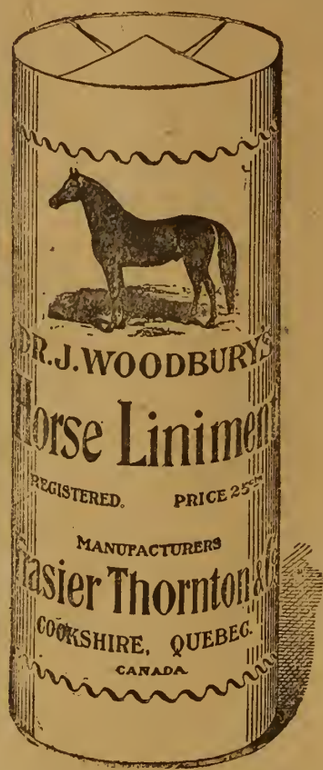
Feeding the weanlings is not a complex problem. Many times the colts do not eat well at first and have poor appetites all through the winter. This may be due to overfeeding at the start, or to using the same feed without any change. They may be started, if they have not been eating grain through the summer, with a few handfuls of crushed oats and bran.

A mixture of four parts of crushed corn, three of bran and one of linseed meal is equally good. Good clover or alfalfa hay, along with clean, pure water, fill out the feer requirements. The bran and alfalfa are valuable because they are ordinarily laxative enough to prevent constipation, a frequent cause of serious trouble at weaning time. Constipation can be relieved by a dose of castor oil or injections of warm water. At the same time reduce the feed; there is a tendency to overfeed, especially if the colts are not used to grain.

Not all the attention is to be given to the foal. The care of the mare is just as important as that of the foal, if her usefulness as a brood mare is to be retained. As soon as the colt is separated from the dam, the amount of grain given the mare is necessarily reduced to check the flow of milk. The udder will need to be partially milked out if it becomes so full that it causes uneasiness or pain. If all the milk is removed, the process of drying up the flow will be much longer. When the udder becomes caked, applications of lard will give relief.

Weaning time had just as well be called training time. "Breaking" is

Dr. J. Woodbury's Horse Liniment
THE INFALLIBLE REMEDY



For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

Bear River, N. S.
Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say that no lumberman should be without it.
Yours truly, Clarke Bros.

Hubbard's Cove, N. S.
Dear Sirs:—I have used Dr J. Woodbury's Horse Liniment in my stable for years and consider it the best liniment on the market for both internal and external use.
Yours truly, C. C. McLean.

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This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.

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Dear Sirs:—Kindly send me 6 dozen bottles Dr. J. Woodbury s Horse Liniment. I have not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.

Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.

Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse, I recommend it to my friends. E. J. Anderson, Truro, N. S.

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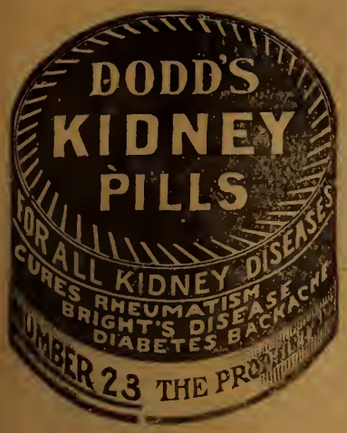

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Mr. G. C. Inman, 330, Harcourt-street, Sturgeon Creek, Winnipeg, says:—"I was in a very weak, run-down condition. I ate little, frequently missed meals because I had no appetite and suffered if I forced myself to eat. My nerves wer in a bad way and my sleep was disturbed. Everything pointed to nervous breakdown. Then I got Dr. Cassell's Tablets, and it was astonishing how my strength came back." Mr. Inman is now in England as manager of A. W. Inman and Son, printers, Leeds.

A free sample of Dr. Cassell's Tablets will be sent to you on receipt of 5 cents for mailing and packing. Address Harold F. Ritchie and Co., Ltd., 10, M'Caul-street, Toronto.

Dr. Cassell's Tablets are the supreme remedy for Dyspepsia, Kilney Troubles, Sleeplessness, Anaemia, Nervous ailments, and Nerve paralysi, and for weakness in children. Specially valuable for nursing mothers and during the critical periods of life. Price 50 cents per tube, six tubes for the price of five, from Druggists and Storekeepers throughout Canada. Don't waste your money on imitations; get the genuine Dr. Cassell's Tablets.

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the wrong term, and an unnecessary oen, if the colt is handled before it becomes too old to learn proper stable manners. If the colts have not been haltered, it is time they are taught to lead at the halter and to stand tied in the stall.

DEAL HUMANELY WITH OLD HORSES

One of the vexatious problems that every farmer must solve is how to dispose of the farm horses which have outlived their period of usefulness. Some farmers make it a rule to sell their horses at the age of eight or ten years, and replace them with younger and more vigorous stock. Thus they secure the services of a horse during his best years, and then pass him on to someone who prefers an older and cheaper horse. Obviously, everyone cannot follow this plan, hence it does not solve the problem.

Some one of us may own a horse that was born and raised on the farm, and has been a faithful servant all its days. Perhaps it is the family driving horse, driven by old and young of two or three generations. Such an animal, when his worth is fully appreciated, is regarded almost as highly as a member of the fmily.

It is strange that some men will sell an old horse to some party who will probably overwork and abuse him as long as he is capable of work. If a man owns a horse that is no longer profitable to keep, it is certainly more humane to kill him than to sell hi mto an unkind master. We may be able in some cases, to place an old horse with some one whom we can trust to treat him kindly and feed him well in return for the moderate amount of light work that he can do. But we should be sure that the man is at least fit to associate with the horse!

Probably the best and most humane way to treat a very old horse is to kill him. Winter is coming on, and a horse that is too old to eat and digest his food perfectly must endure much discomfort and sugering before the return of warm weather. He may get down in his stall, and if unable to rise it may be necessary to kill him at last, so why not put him out of the way before he is compelled to endure suffering and pain? A bullet through the brain will kill a horse instantly and painlessly, and an hour or two of work will give him a decent burial. If we are too tender-hearted for this performance—and it is no bad fault if we are—some one can always be found in the neighborhood who is qualified to act in our place.

JOHN MARSH.

HORSESHOEING THAT PREVENTS LAMENESS

Unsoundness among horses can often be prevented by keeping the animal's feet level when shoes ar being put on. In shaping the foot for the shoe the hoof should be shortened to its natural length, and to do this the rasp and not the nippers or a knife should be used. The frog of the foot should not be touched except to trim off the ragged edges. The frog acts the lower surface of the shoe so that it will have a bearing surface. The blacksmith should be instructed not to trim away the bars of the foot as is often done. This results in a contracted hoof and reduces the years of usefulness of the horse.

The principal object of shoeing is to reduce the wear on the hoof, though faults of gait and conformation may be corrected by careful shoeing. The shape of the colt's foot can be greatly changed by proper shoeing. To increase the length of the step the toe should be trimmed rather long. The shoe should be square at the toe and weighed by increasing the thickness of the shoe. To make a horse 'go high' or lift the feet the toe of the shoe should be rounded on the lower outside edge and the heel of the shoe weighted.

"This is the Kind of Horse the Government wants"

No horse with a Spavin, Splint, Ringbone, Curb, Bony Growth, Capped Hock, Wind Puff, Strained Tendon or Sweeney can now pass the keen-eyed Inspectors of the Government Remount Stations.

Splendid-looking Horses—otherwise sound—are being turned down because of some blemish that could be quickly cured with

Gombault's Caustic Balsam

Here is your chance to make money for yourself and at the same time to help in the Government's great Thrift and Production movement.

Put your horse into condition with Gombault's Caustic Balsam. A safe and reliable remedy.

Gombault's Caustic Balsam if applied immediately after burns, bruises or cuts, is a perfect antiseptic—soothing and healing. An absolutely safe, external remedy for man or beast.

Every bottle of **Caustic Balsam** sold will surely give satisfaction. Price $1.50 per bottle. Sold by druggists, or sent by parcel post with full directions for its use. Send for descriptive circulars, testimonials, etc.

VICTORY WORK AND FIGHT NATIONAL SERVICE

THE LAWRENCE-WILLIAMS COMPANY
TORONTO, ONT. 20

REMEDIES FOR SADDLE SORES

Four or five remedies are generally used on sore backs. Hydrogen peroxide is seldom necessary unless it is a running sore. Carbolized vaseline is good to soften a scab which is full of dirt or which for some other reason should be washed off. As a rule, once a good scab forms it should be left alone; a sore heals best under a scab. At first, when the sore is raw—and if the horse is being used it is generally raw every time the saddle is removed—healing oil or powder should be applied, either separately or together. The healing oil is composed largely of turpentine; the powder of burnt alum combined with various healing and antiseptic ingredients—carbolic acid, camphor, boric acid and talc. Burnt alum alone is healing and drying. Iodine is also used occasionally. For a sore that is nearly healed or is still tender collodion is often helpful. It toughens the skin and acts as an effectual buffer between the hide and the blanket. If it is necessary to ride the horse it should be applied each time before saddling.

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The Canadian Food and Tonic for horses cows, hogs, sheep and fowl, is composed of nourishing ingredients made from medicinal powders and roots constituting the best food and tonic for animals.

Omazon causes the disappearance of all disgust for food, constipation and congestion of the bowels, colics and diarrhoea.

All farmers and breeders should have it at hand.

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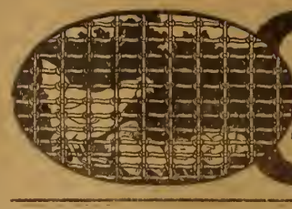
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The Banwell-Hoxie Wire Fence Company, Ltd.,
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POULTRY.

WINTER EGG PRODUCTION INCREASED BY LESSENING WASTE IN GRAIN RATION

If a farmer has a cow which goes dry five months in the year, he gets her off his hands as quickly as he can. If his hens go dry five months in the year he keeps right on throwing high-priced grain into them and waits patiently until they are ready to lay again. If he gave his hens as good winter care as he gave his cows he would get as good, if not better returns from them.

There are times during November, December and January when there are not enough eggs going into the village to supply the local demand, yet during April they come in at the rate of three hundred dozen or more a day. Probably nine out of ten farmers do not expect to get winter eggs, do not even try to get them in spite of the fact that here is the richest poultry harvest of the year. The average farm hen begins to lay about the first or March and keeps it up more or less regularly until the vrst of October. It is doubtful if she lays more than seven dozen eggs during this time, worth, at usual warm weather prices, about $1.40. With grain worth what it is now it costs that much to feed her a year and if she is to show a profit it must be during the other five months.

Where the Profit Comes in

Give her two months to get through the molt and with the right kind of care she should produce at least three dozen eggs during December, January and February, worth forty to sixty cents per dozen, if properly marketed, or thirty to forty cents per dozen if sold in the village. Under the same conditions early hatched pullets should begin to lay in October or November and keep it up all winter.

During the warmer months a hen has a variety of food, fresh air and exercise, which she does not have during the winter, hence the lack of eggs. Give her these and she will lay more profitably in cold weather than in the warm, probably not as many eggs but prices will be two or three times as high. To secure a profitable winter egg yield it does not necessarily follow that she must have more feed than she usually gets but that it must be of a greater variety, thereofer all we get out of her during the winter months is profit. Let us see what we must do to get this profit.

First the henhouse must be given a thorough cleaning, the roof made tight and all cracks in the wall covered. If the windows are filled with glass take out half of them and cover the openings with light muslin or a good grade of cheesecloth. Remember that hens do not require warmth so much as pure air. Cover the floor with at least six inches of clean straw or shredded cord fodder. The latter makes excellent scratching material as it is tough and the hens will eat nearly all the leaves. It is in scratching that they get their exercise so o not fail to give them something to scratch in, removing it as soon as it becomes worn or soiled and replacing with fresh litter.

On the farm it is not difficult to supply the variety of food required. The main ration for winter should be corn at night, all they will eat for it is a long time till morning, and if a little is left they will be scratching for it at daybreak. The breakfast, wheat, oats, buckwheat, or a mixture of these, should be a light meal, not over half as much as they have at night. If they get their fill early in the day they will loaf until they become hungry again, and loafers are not layers. Scatter the grain in the litter so they will have to dig for it, and the colder the weather the more they must scratch to keep warm.

Feeding for Results

Some time during the middle of the day give them all the sprouted oats they will eat up clean. This is the best green food obtainable, but cabbages are a close second, followed by beets, carrots, and alfalfa and clover hay. The wife of a neighboring farmer has one hundred cabbages put away for her hens this winter. She always gets a good winter egg yield and is one of a number of farmers' wives I know who make more off their hens than their husbands do from their hogs. Cabbages and roots should be given early in the day as it requires considerable time and labor to pick them to pieces.

Furnishing Egg-Producing Material.

There is not much egg-making material in the grain and green food, their functions being to sustain life and keep the body in healthy condition. To enable her to produce eggs we must give her something to make them of, food rich in protein and meat of some kind to take the place of the bugs and worms she gathers for herself during the warm weather. The following dry mash not only supplies protein but also adds to the variety of her ration:

Bran 100 lbs.; ground corn and oats 100 lbs.; middlings 50 lbs.; alfalfa meal 50 lbs.; beef scraps 50 lbs.; fine table salt 8 lbs.

Dry beef scraps will replace the insect food and she should have access to it at all times. This is the cheapest egg-making food on the market and if it is necessary to omit either the mash or the meat it is better to leave out the former, provided a variety can be supplied in some other form. Green cut bone is the best meat food to be had, but it is hard to get and if given a chance a hen will eat to much of it.

Other Essentials

We may do all of these things and still not get an egg. This will probably be the case unless we have put ourselves on a friendly footing with the hens. If on cold days they hump up in corners and on the perches and show no interest when we enter the house the nests will be eggless. If they are kept busy during the greater part of the day, if they come running when we open the door, expecting a scramble over a handful of breadcrumbs, a plate of table scraps or an ear of corn, or the delight of scratching in a basket of clover chaff fresh from the barn floor, it is a safe bet that there is something doing in eggs at three, four or five cents each.

Nests, mash hoppers, drinking vessels, etc., should be fifteen to eighteen inches above the floor to leave space clear for scratching purposes and to keep them free from litter. A low, wooden candy tub makes a good drinking vessel for winter. If filled with hot water in the morning it will not become cold until late in the day. Empty it at night and turn it over so it will be free from ice and clean in the morning, and two or three times a week add enough permanganate of potash to color the water red. This not only purifies the vessel but acts as a check toward colds and other sickness.

Provide a Dusting Place

If the house has a board or concrete floor provide a dusting box. Sifted coal ashes make good dusting material and the hen greatly enjoys the little particles of coal she finds in it. Also the coal carries impurities out of her system. Provide oyster shells, grit, too, if you wish it, but if she has plenty of shells she will not care much about grit.

An elaborate poultry house is not needed, though the more convenient the building the easier it is to secure the desired results. Dryness, light and ventilation are the principal requisites. There are many ways not mentioned here to add to the variety of food, hot mashes with cooked vegetables, milk, cottage cheese, stale bread, parings, etc., all of which increase egg production and cut down on the feed bill. But with all these we must keep on visiting terms with our hens so they will come a-running and not go a-running every time we open the door. C. N. WHITTAKER.

PUTTING THE HEN ON WAR RATION

We are warned by the government that there may be a shortage of food the coming winter, due to our pledge to help feed the nations allied with us in the present war. In particular we are urged to be economical in feeding our poultry, and one of the advisers has gone so far as to tell poultrymen to feed more corn and less wheat.

I do not believe I ever did so much thinking, studying and experimenting as I did to get this feeding proposition where I could have the same results at a less cost. Finally, I decided upon what I believe to be a ration that is not only well balanced, but which supplies the needed material to make eggs. My method of feeding follows:

In the morning I feed a mash made up of equal parts, by weight, of wheat bran, corn-meal and meat scrap. To this I add about fifteen per cent. of semi-solid buttermilk. I work this butter-milk thoroughly with dry-mash ingredients until it is evenly distributed, and then I add sufficient water to make the mess moist and crumbly. I never knew my fowls to be so greedy a sthey are when this mash is fed, and it works like a charm. I am getting twenty-five per cent. more eggs than I did at the same time in former years, with hens of the same breed and same age.

I also feed this mash to my growing stock, and the effect upon them is magical. I might add that semi-solid butter-milk is put up in the West, being a by-product of the large creameries in that section, and it is now sold commercially. Where this cannot be had, other milk will act as a substitute, but butter-milk or sour milk is preferred. Of this mash I feed an iron spoonful (equivalent to what could be held in one hand) for every two fowls in the pen. To the growing stock I give about a spoonful in every two or three in the flock.

In the evening I feed a grain mixture composed of whole oats, two parts; cracked corn, two parts; wheat, one part. (All by weight.) This I feed to the laying stock—a handful for each fowl in the pen. For the growing stock I feed a grain mixture composed of equal parts of cracked corn and wheat, allowing a handful for each of the largest (about half-matured) birds, a handful for every two chicks weighing about a pound and a half each, and a handful for every three chicks weighing less than that. The allowance of feed, however, is regulated from time to time according to the appetites of the fowls. What might be right today would not necessarily hold good tomorrow. Appetites change.

In addition to these feeds I give green stuff, such as lawn clippings, vegetable leaves, etc., and when these articles are scarce the stock is fed sprouted oats.

Sprouted oats make a good food in winter, and should be fed daily. Sprouting oats by using hotbeds, employing the same method as used when sprouting in trays, is very good for early spring, summer and fall growing. A very successful way, too, is to use a regular greenhouse. During the winter it is necessary to heat this house either by stove or hot-water pipes.

In sprouting, the oats are soaked overnight in a pailful of water, to which a teaspoonful of formalin has been added to prevent mold. They are then spread out an inch thick on a tray which is provided with drainage, and twice a day are sprinkled with warm water. Stir occasionally until the sprouts start. When three or four inches high they are ready for use. One square inch per hen per day is the amount of sprouted oats usually fed. The sprouting grain is relished by every bird in the flock. Sick gofwls which refuse to eat other feed often will eat the oats greedily.

SMALL VS. LARGE FLOCKS

For years the beginner has been advised to start in the business in a small way. In fact, he has been cautioned to do so that he might increase in knowledge as his plant enlarged. It is not necessary to go over all that again, but more important to take up the methods employed by so many beginners—and not a few others who have been in the business for several years.

It is false economy to have these large families, as has been proved time and again. The most successful poultrymen and poulterers of to-day are of the same opinion.

The arguments used by advocates of large families—50 or more in a flock—are:

1. It saves expense in building.
2. It saves labor in feeding and watering.
3. It saves time.

Grant that there will be less building required, and that time and labor will be saved, the argument in favor of small flocks—not more than 25 head in a pen—means:

1. There will be no crowding and fighting on the roost at night.
2. There will be more exercise taken when the fowls are compelled to remain indoors.
3. There will be less vices, like feather pulling, egg eating, bleeding the male bird's comb, etc.
4. There will be more eggs.
5. There will be better fertility.
6. There will be better health.

Are not such reasons worth more than the expense of extra lumber, extra labor, extra time?

If there is anything wrong with the hens—such like an ailment or droopiness, or an accident—it will be more readily noticed in a small.

In small flocks there is a better chance to see that all the fowls get a proper share of the feed. There

A MESSAGE TO WOMEN!!
LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.
If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:
Mrs. M. Summers, Box 309 Windsor, Ont.

are fewer "bullies" who drive away the more timid hens.

Overcrowded flocks are not the active, energetic hens that are so needed to make profitable egg production. Besides, there cannot be the proper fertility. On farms where there are these large, common flocks, two or more males are allowed with the hens at the same time. Even if these males do not quarrel, they are always interfering with the other's attention to the females. This not only cripples fertility, but is injurious to the hens.

But the greatest viewpoint is that from health. It is a noteworthy fact that the bulk of injuiries that come to the editor, asking for roup, cholera, and other ailment remedies, come from farms upón which it is the custom to have large flocks. At night these birds crowd on the roosts, get close together, and the animal heat make them "sweat." This condition causes an injury when the next morning the hens fly from their roosts and go out to face a temperature many degrees colder than what they had during the night.

For successful work, we repeat, never allow more than 25 fowls in one flock, and the nearer you keep the number to 15, the better will be the returns.

Corn firms the meat.

First grow bone and muscle, and then put on fat.

Close granied poultry are most desirable.

Pure food improves the flavor of the meat.

Pure food poultry are most desirable.

It takes about eight weeks to grow a squab broiler.

Dark pin feathers give a dirty appearance to a dressed carcass.

M. K. BOYER.

CHARCOAL FOR POULTRY

Charcoal seems to worry beginners as well as some experienced poultry raisers. I have heard any number of old breeders say that poutlry would do as well without charcoal as with it, while some write us, "What is it good for and of what benefit is it to fowls?" There is no question but what charcoal prevents noxious gases that form in the digestive organs of fowls.

I have found that charcoal puts new life into a lazy layer, as well as aids every organ which is very likely to be overcome through its contact with impurities. Charcoal cleanses the crop, prevents sour crop, cleanses the intestines, brings about sweetness, and assures purity to decayed and fermented food. It aids the fowl's digestion. I have given it to my fowls constantly for years, and seldom have a fowl die from indigestion; in fact, I cannot recall ever having lost a fowl from indigestion since we began the use of charcoal. When a fowl feeds freely on charcoal, it leaves its roosting room in the morning feeling fine and fresh, while those that are deprived of charcoal and are fed heavily on fat-producing foods, appear stupid, dull and listless, never laying an egg, an eventually dying from an enlarged liver. I never saw a fowl which was fed on charcoal suffer severely with bowel trouble. In fact, it's a wonderful health producer. No poultry keeper can afford to go through the winter without supplying charcoal liberally.—J. C. Clipp, in Exchange.

Pigeon eggs are usually fertile if the pigeons are healthy and properly fed, especially when they have free range. One squab (usually the male) frequently hatches first, and where there are several cases where the squab outgrows its nestmate it may be advisable to sort the squabs in the nests, making the pairs as uniform as possible in size and age. If the parent birds die the squabs may sometimes be removed to a nest where there is only one squab, or they may be fed artificially, although this process takes considerable time.

They all come out of the "BEAVER" FLOUR Barrel

Apple Pie and Hot Rolls for supper—Jelly Roll and Chocolate Cake and delicious homemade Bread for dinner—Puddings and Doughnuts, and Cookies and Raisin Bread—all at their daintiest and best when made of

BEAVER FLOUR

MILLED OF BLENDED WHEAT

"Beaver" Flour is just as good for Pastry as for Bread. It is the product of Ontario winter wheat, blended with western spring wheat to increase the strength. "Beaver" Flour has the best qualities of both kinds of wheat—the whiteness, lightness, delicate flavour and perfect Pastry making qualities of Ontario winter wheat—coupled with the extra strength of western spring wheat. Being scientifically blended in exact proportions, the blended wheats are always the same in strength and quality—and so is the flour.

If you have never tried a blended flour, you cannot imagine what a difference there is between "Beaver" Flour and the usual western spring wheat flours. Get a sack of "Beaver" Flour at your dealer's, and try it for yourself.

DEALERS—get our prices on Feed, Coarse Grains and Cereals. 198

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Preserves getting low?

Tide over the winter with

CROWN BRAND CORN PURE SYRUP

Everybody likes this delicious Table Syrup—and it's much less expensive than butter for the children to eat with bread.

At all Grocers—2, 5, 10 and 20 lb. tins— 3 lb. Glass Jars.

Write for free Cook Book. 33

THE CANADA STARCH CO. LIMITED, - MONTREAL.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

ANNUAL CONVENTION OF THE NEW BRUNSWICK WOMEN'S INSTITUTES

At the fifth annual Convention of the N. B. W. I., 175 members were enrolled for the three days' sessions, with several members coming in for special sessions. This excellent attendance together with the ready willingness on the part of the members to make the Convention a success, resulted in the 1917 Convention being "the best yet."

The sessions were held in the Aberdeen School, Moncton, October 2nd, 3rd and 4th, with Miss Winter, the Supervisor, presiding at the opening session. Miss Winter took this opportunity to give her year's report and brought out the following facts: an increase of 10 new branches since November, 1916; 92 branches at the present time with a membership of 2600; 75 branches from their financial statements from July, 1916 to June, 1917, showed $14.505.61 raised and an expenditure of $11.361.48; an additional sum of $2641.03 recently raised by 71 Institutes and sent to Halifax as a gift from the N. B. Women's Institutes for the Y. M. C. A. War Fund; notwithstanding the demand for patriotic work the Institute continue their interesting monthly programme and devote part of their monies to local improvements, especially schools and public halls; medical inspection, through the efforts of the Institute has been established in two schools; 156 girls and women took advantage of the educational training yiven last winter at the short courses in home economics; the summer of 1917 saw 102 meetings held when special speakers visited the Institutes and delivered lectures on "Women's Responsibilities of Today" and demonstrated the "canning of fruits, vegetables and meat"; the total attendance at these meetings was 4913; at last winter's Apple Show held in St. John, 22 Institutes exhibited 535 jars of fruits and vegetables and the department awarded $50.00 in prizes; at this year's Convention 43 Institutes are exhibiting 469 jars of canned fruits, vegetables and meats, the department giving $101.00 in prizes; for the best aperage attendance of members at meetings and the most carefully planned and carried our programmes, to date from January, 1918 to June 30, 1918, 6 prizes amounting to $90.00 will be distributed to the Institute, also for best written essays on "War Time Thrift and Economy," "Systematic Housekeeping," and "Advantages to a Community of having a Women's Institute," the department will offer 3 prizes on each subject, the money amounting to $66.00, the essays not to exceed 1200 words and to be handed in not later than December 31st, 1917.

The formal opening took place the evening of October 2nd. Following the reading by all the members of a War Time Prayer, especially prepared for the Women's Institute Convention. Mrs. W. A. Ferguson, President of the Moncton branch of the Canadian Red Cross Society, welcomed the delegates to Moncton. Her welcome was brief but to the point and much appreciated by the Institute women. Mrs. C. J. Osman, of Hillsborough, who so ably replied to the Address of Welcome, demonstrated her capability as a public speaker and not a woman present but felt proud that such an intelligent woman as Mrs. Osman had been selected to take this part in the Convention.

Mrs. H. W. Parsons, of Cochrane, Ontario, a woman of much experience in Institute work in Ontario, and especially brought to Moncton to take a conspicuous share in the Convention proceedings, made herself invaluable to every women at the sessions, whether an Institute member or visitor. The addresses which held her audiences from beginning to end were "AWoman's Duty Towards the National Debt," "Child Conservation," "The Girls' Institutes" and "Parliamentary Usage."

The morning session of October 3rd was devoted to branch reports and Five Minute Papers. Possibly, so far as direct help to the Institutes is concerned, this session was the most helpful. An indication of this was the continual jotting down of notes. In the paper "Punctuality" by Miss Celia Peck, President of the Hopewell Hill Institute, Miss Peck said, "Perfection in all things should be the aim of every member of the Women's Institute, and the first step towards that goal is Punctuality. Punctuality represents a great many things, but among them, truthfulness, faith, orderliness and consideration of others." Her final word was. "Let us all, when we return to our home (or better still, now) be resolved never to be late anywhere, and impress it upon those over whom we have control, the necessity of consideration for others in this respect and so cultivate habits that represent the finest of the fine arts,—a beautiful behavior."

"Duties and Privileges of Institute Officers" was the title of the paper read by Mrs. Havelock Coy, Vice President of the Fredericton Institute, who said. "Much of the success of an Institute depends on the personality of the officers, particularly the president. A successful president must possess the quality of leadership and any woman with e desire to be of use may fit herself for the duties of leadership. "Be sure you are right, then go ahead" is an old saying, but one every Institute officer should remember. We need no greater incentive than our motto "For Home and Country" to inspire us to do our best. A good officer should possess a spirit of self-acrifice and be willing to forget pleasure and personal interests when they clash with the performance of duty. Officers should always attend the regular and special meetings of the society and serve whenever possible in any capacity desired by the Institute. They should be filled with a desire to serve the communities in which they live; successful in getting others to work; getting all the members working; giving them responsible places to fill and not trying to do it all themselves. The president should possess executive ability, self control in trying situations, the power to efface herself for the good of the work she represents, good judgment and to treat every member with courtesy and kindness. The president should always be on time, have her program arranged and start the meeting promptly. The business should not be allowed to drag along, but be put through with dispatch, thus leaving time for the presentation of some subject either in the form of a paper or address, or perhaps the conversational method, or reading selections from helpful books along the lines suggested in the hand book. It is the duty of the president to see that the constitution and by laws of the Institute be strictly conformed to and the regulations be observed. The secretary-treasurer and president are members ex officio of all committees and both should be present at all committee meetings if possible. The executive consists of the president, vice president and secretary-treasurer. It is the duty of this executive to carry into effect the business of the Institute as specified by the membership or by the board of directors, but sometimes it is necessary to act when the meeting is very small and the matter urgent, and then the officers are justified in deciding without waiting for further consultation with the directors and membership, particularly if the directors and membership have been notified and failed to come to the meeting."

Mrs. H. McClary, of the Lower Kingsclear Institute concluded her paper on "Letting Our Head Save Our Heels" with these remarks, "If you have a place for everything and insist on things being kept in their places, you can always find anything you want without having to hunt for it."

Miss Charlotte Scovil, secretary of the Queenstown Institute, in dealing with the subject, "The Institute in a Rut," made the following comparison: "It is not the fault of the willing horse that the wagon drops into a rut; it may not be the fault of the unwilling one, but it is the fault of both if they do not get the load out again provided the load is not too heavy. So with Institutes; there are always a willing few, but without the help of every member an Institute cannot help but get in a rut. If each member of the Institute is made to feel that she is positively necessary in the carrying on of the work, there will be no lack of interest."

Another excellent paper on Institute work, prepared by Mrs. A. G. Dickson, vice president of the Centre Nappan Institute, bore the title "Making Institute Work More Effective." Mrs. Dickson said, "I should like to see all members have a chance of presiding at a meeting; it is an education everyone should aim to acquire. For the roll call I might suggest a subject each month, asking all to express a few thoughts on same at next meeting. By this we will have gained two things, induced our members to think and to give expression to their thoughts, thereby gaining confidence and ease and paving the way for greater achievements. Let us have a number of working committees. Let us bring all our home problems to the Institute, such as planning our work, home management, the training of our children and talk them over and I am sure some will be helped. Sound bodies for our boys and girls are as essential as sound minds. In these days when our country is being drained of its population, the subject of caring for the health of our rising generation becomes a very important one. Our Institutes could do no more effective work than by bringing about medical inspection for our schools. To make this work successful we must have medical inspectors appointed and paid by the Government. Our Government appoints inspectors for seeds, for animals, for poultry; surely they can be brought to see the greater importance of safe-guarding the health of the youth of our country. Let us work for this object and not only this generation but those to come will bless the Women's Institutes".

Miss Bessie Fraser's paper on the subject, "When and How to Display the Canadian Flag" was well received. The introduction to her paper was "When we speak of the Canadian flag, we speak of a thing which has no existence. Other parts of the British Empire have adopted and made legal a distinctive flag, but Canada has never done so. By custom, we have come to call the flag of the British Merchant Marine, the red ensign with the Union Jack in the first quarter, the Canadian flag, and have placed our coat of arms in the fly, but no Act of Parliament has made this legal." Her concluding words were, "Let us realize that this flag stands for all that we can love, respect and admire, that wherever it flies, liberty and justice to all is the law and let us say and mean it when we say "We'll never let the old flag fall.' "

Many a society could have profited by the thoroughly businesslike way the session for the morning of October 4th was carried out, under the leadership of Mrs. Parsons.

The following resolutions were moved and carried by the Convention:

WHEREAS, milk is essential to the well-being of the young and growing child, Be it Resolved that the Food Controller so regulate the price and distribution of feed to the farmer to enable him to produce the supply of milk necessary; and further, to regulate the price of milk products to the consumer.

WHEREAS, moving picture shows are chiefly patronized by the young people of the land and that we consider many of the pictures shown most injurious to their moral well-being, it is resolved that a woman be placed on the Provincial Board of Censors.

RESOLVED, that in the opinion of

TRAPPERS
Get "MORE MONEY"
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"SHUBERT"
the largest house in the World dealing exclusively in NORTH AMERICAN RAW FURS, a reliable—responsible—safe Fur House with an unblemished reputation existing for "more than a third of a century," a long successful record of sending Fur Shippers prompt, SATISFACTORY AND PROFITABLE returns. Write for "The Shubert Shipper," the only reliable, accurate market report and price list of its kind published.
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The Best is none too good for the Farmer
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Known from Coast to Coast
R. G. LONG & CO. LIMITED
TORONTO ONTARIO

SUFFERED WITH HACKING COUGH

COULD NOT SLEEP AT NIGHT.

The constant hacking cough that sticks to you in spite of everything you have done to relieve it, is a source of danger. The longer the cough stays, the more serious menace it is to your health.

It is easy to check a cough at the outset with Dr. Wood's Norway Pine Syrup. If you have let it run though, it takes a while longer to cure, but Dr. Wood's Norway Pine Syrup will cure it even then after other remedies have failed.

Mr. J. Henry Landry, South River, Burgeois, N.S., writes:—"I received such great benefit from Dr. Wood's Norway Pine Syrup that I cannot help expressing my thanks. I suffered with a hacking cough for over a month, and could not sleep at night. I used many kinds of remedies, but they didn't do me any good, until I used 'Dr. Wood's,' and found great relief right from the start. I only used two bottles, and was completely cured. I will never be without it as long as I live."

There are a number of substitutes on the market for Dr. Wood's Norway Pine Syrup, so when you ask for it see that it is put up in a yellow wrapper; three pine trees the trade mark; price 25c. and 50c., and that it bears the name, The T. Milburn Co., Limited, Toronto, Ont.

this Convention, medical inspection of schools would be beneficial to the youth of our country, and urge the mothers of our Institute to confer with their local boards to bring about this measure.

RESOLVED, that this Convention recommend to the Provincial Legislature the advisability of making it possible for women, other than rate payers, to become members of our Rural School Boards.

WHEREAS, the members of the Women's Institutes have noted the steps already taken with regard to wheat, be it resolved that other grains for food and feed purposes shall not be used in the making of spirituous liquors during the period of the war.

THAT, WHEREAS, the Women's Institute of New Brunswick are keenly appreciative of the endeavors of Hon. W. J. Hanna in his capacity of Food Controller;

AND WHEREAS, the Women's Institute are the best organized company of women in New Brunswick;

BE It Resolved that the Women's Institute of New Brunswick through its Secretary express to the Controller their sympathy and pledge their hearty support.

RESOLVED, that the Department of Agriculture be asked to co-operate with the University at Fredericton and see if they could issue lending libraries as McGill University does.

RESOLVED, that it is the opinion of this Women's Institute that Women should be appointed on Hospital Boards and Municipal Homes of all cities, towns and municipalities of this Province.

WHEREAS, the nature ofwomen's home life requires them to understand all branches of sanitation, as upon them falls more heavily the evils resulting from public uncleanliness; therefore resolved, that it is the opinion of this Women's Institute that women should be appointed on the various governing bodies of Boards of Health of the Province of New Brunswick.

Mrs. Jean Muldrew, Director of Domestic Economy, office of the Food Controller, Ottawa, delivered an address on "Good Conservation." Not a woman present but felt her responsibility, so effectively did Mrs. Muldrew's message strike home. Mrs. Muldrew, in the absence of Miss McIsaac, Superintendent of the Alberta Women's Institutes, also spoke on the work of the Alberta Women's Institutes, of which she is Assistant Supervisor. Dr. Keirstead of the University of New Brunswick was another speaker on food conservation. He explained the method to be used in the distribution of pledge cards when the Women's Institutes will be asked to cooperate.

One of the most helpful papers of the entire Convention was that read by Mrs. Herbert Reid, President of the Stonehaven W. I. Her subject "Literature for Young People" was so practical, it will be published in full in this journal at a later date.

"The Connecting Links between the Home and the School" brought forth many splendid suggestions. Mrs. James Porter of Andover, the writer of this educational paper, was requested to read it at the Teachers' Institute at Grand Falls, following the Convention.

Rev. G. M. Young, of Fredericton, pointed out in his eloquent address "Reconstruction after the War" that the men in the trenches are enduring hardships for the fragrant home to be. In the days to come we must learn to do better and see that every humble worker gets his fair share. We will need to take knowledge of the labor party in the days to come. The great public utilities must be used for public purposes in the days that will follow the war. Children should be trained so as to render efficient service to the state.

It was regrettable that for the two important subjects included in our programme, "Cheering Our Soldiers," and "Rural and Urban Sanitation" Mrs. E. Atherton Smith, and Dr. W. F. Roberts, M.L.A., both of St. John, found it impossible to attend.

The Institute women will cherish fond memories of the hospitality of Moncton citizens. The afternoon of October 3rd they were entertained to a delightful auto ride around the city and suburbs, followed by a supper served in the basement of the Central Baptist Church.

Totally taken by surprise, Miss Winter, the Supervisor, was made the recipient of a handsome club bag, Mrs. Rainsford Keith of Havelock, making the presentation. Mrs. J. W. V. Lawlor, of St. John, on behalf of the Institute women, presented Mrs. Parsons, who had done so much to contribute to the beneficial side of the Convention, with a beautiful bouquet of roses. Both Miss Winter and Mrs. Parsons made suitable replies.

The branch reports and question box livened up the meetings considerably, and many problems were solved by the question box committee. The branch reports echoed with activity and so numerous were the splendid accounts for home and country, not a woman at the meetings, a member of a Women's Institute, but felt proud of it.

Preceding the auto rides Wednesday afternoon, all assembled in the city hall to hear the judges' verdict as to those Institutes winning prizes in the Canning Competition. Two large stands, running across the centre of the hall, with trimmings of red, white and blue, were well filled with every variety of fruit, vegetable and meat. Many of the jars were sold and the money forwarded to the Institutes, while some branches asked that their exhibits be sent to a Convalescent Home or Hospital to cheer the sick.

Clean Tools Work Better and Last Longer
You bet — it pays in time, money and results to keep all tools clean, bright, free from rust. And Old Dutch does it right.
Old Dutch Cleanser
Chases Dirt

No Advance in 3 Years

With war-time prices so terribly high for nearly every article of food, it must be a particular satisfaction to those who love good coffee to know that there has been no advance in the price of Red Rose Coffee for three years—and the great increase in the sale of Red Rose Coffee this year shows that the price is appreciated.

People everywhere seem to be using much more coffee than they did before.

Red Rose Tea is economical on account of its superior quality—but Red Rose Coffee is economical both on account of its quality and price, a combination hard to maintain in war-time.

675

Red Rose Coffee

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I was cured of terrible lumbago by
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WASTE OF MONEY IN BUYING FOODS

By buying more than is necessary of perishable food.

Buying poor materials because they are cheap.

Buying foods out of season, they are very expensive and have not the same flavor or food value and home production is not appreciated when in season, and it teaches people to acquire a craving for foods hard to obtain.

By buying staple things in small amounts when it is cheaper to buy in larger.

Carelessness in keeping supplies after obtained.

Poor cooking meas a loss of food value, the food is less digestible and less attractive.

By carelessly leaving large amounts adhering to dishes.

Serving people more than they can eat.

The need of right buying and right cooking is evident since the body must be kept in repair, making it less susceptible to disease. It is necessary to know the value and understand the composition of our most common foods anyway. The cheapest diet is the one into which cereal grain foods enter most largely, also the cost is greatly increased when shell fish and chicken broilers take the place of dairy products and our ordinary meats.

PUTTING AWAY SUMMER CLOTHES

Since of late years our climate has become so variable, a great many do not pack away summer clothes until about the end of November. Then a time comes when there is little leisure. Fruit and vegetables are all in place, fall housecleaning is done, and there is time to "fuss" over the packing as long as one chooses.

And, right here, it pays to take time over the work. It is necessary to have things come out looking well next spring, and how can they, if tumbled into boxes anyway and jammed away anywhere during four or five months of winter.

Of course cedar chests are the ideal for packing things in, especially for summer when moths run riot. But in winter it does not so much matter. Plenty of boxes and trunks, and a cold attic or other room for storage will supply all necessaries. If each person in the family can have a box for themselves, why all the better; just so much confusion can be saved when this or that garment is needed in the spring. It will be better still if each person can have two boxes, one for fine articles, the other for coarser articles, shoes, slippers etc. And really boxes do not cost very much. Good stout ones with lids can be bought from store keepers for a trifle.

So now the packing itself; in the first place it is absolutely advisable to have everything clean that is put away; and be sure not to lay away anything that has been starched. Wash all the starch out and dry thoroughly ootherwise the garment will turn yellow.

It is also advisable to mend any rips and patch any holes that may have appeared. There is time to do that now, and if there is one thing that is exasperating it is to take out garments in the spring, needed at once for wearing, and find them quite unfit to put on,—a button off here, a hole there, a hem frayed, and so on.

If there are any shirt waists that are too much worn to do duty as shirt waists next summer, keep them out and make them into corset covers. If they are just a little worn about the neck, from wearing stiff collars, cut off the neck band, mark scallops on the edge, buttonhole with floss, and work any little dot or pattern you choose in the scallops. Make the sleeves to match—and presto! a new shirt waist!

If there are any children's dresses that will need lengthening in the spring, do this also before packing the dress away. You can make a very good guess at the length, and so save time in April and May, when housecleaning and gardening are both on with a **rush.**

Fold all garments, do not roll them —and place them flat in the boxes. It is surprising to see how much even a small box will hold. Summer suits and coats should not be packed away; they should be hung up in an out-of-the-way place, on coat and skirt hangers, the coat hangers should be padded to prevent wrinkling of the coat. Brush out every bit of dust from the suit and remove the spots, slipp the coat on the hanger, stuff the sleeves with tissue paper, and put a packing of paper in the front of the coat, buttoning the latter in place. If the place where the suit is to be hung is at all dusty, slip a large bag made of five-cent factory cotton over the whole.

Fancy summer dresses should also be hung up in the same way.

If it is absolutely necessary to pack suits or dresses use plenty of tissue paper for sleeves and soft rolls of it for the folds of the skirt, etc. This will prevent sharp creases. Lay the coat with the fronts on top and button it up over the padding of paper.

Never pack white or light colored materials with white tissue paper, as owing to some chemical used in bleaching it, it is likely to turn them yellow. Use blue tissue paper if possible.

Shoes never should be put away just as they are, if one has not shoe trees for them, one can at least stuff them with paper packed in so tightly that there is no possibility of them getting out of shape and creasing.

Hats too may be kept much more presentable if placed in their boxes on a pad of some sort that will keep the crown from sagging. An invert-

ed strawberry bok padded with paper is good.

Perhaps these little precautions do not seem important, but it is only necessary to try them once to be convinced of their advisability.

LETTING OUR HEAD SAVE OUR HEELS

Written by Mrs. H. McClary of Spring Hill, N. B. Read at the Fifth Annual Convention, N. B. W. I.

Probably most of the women present do their housework, or the best part of it. And, if so, you will know the countless number of steps that have to be taken before that housework is done.

Now, I am going to tell you a few of the things which I have found save me a good many steps and make my work easier.

One of the first things a woman requires in her home, is a bright, cozy kitchen. And one thing which will go far towards brightening that kitchen is a clean stove. Now that is very easy to have. I have found that the stove is far more easily kept clean by doing all my cooking on top of the covers. By this means, the bottoms of pots and pans are never black, and consequently do not require a lot of cleaning. The only utensil I ever put on the flame is the tea kettle and that I never set on top of a cover. You can imagine how much time and labor are saved.

An idea, which I have found very helpful, especially on baking days, is to keep my dishes washed up as I go along. Then, when my cooking is done, I have no table full of dishes to clear away.

Most of the modern kitchens have kitchen cabinets; but a pantry can be made just as convenient. A place can be built in for your flour barrel and sugar, and your bread board and rolling pin can always be kept there. On a shelf just above this should be kept all your spices and flavoring extracts. Although most spices now-a-days come in paper packages or tins, I like labelled glass bottles. You do not need to buy bottles on purpose; I have a number of my spices in Mellin's Food bottles. Sometimes a fruit jar will become cracked. Of course it is no good to hold liquid, but it makes an excellent spice jar. Rice, barley, corn starch, etc., can also be kept in glass jars, conveniently handy.

One, two or maybe three drawers in the pantry are very useful. In one can be kept the knives, forks and spoons, in daily (or almost hourly) use in the kitchen. In another the smaller utensils, such as egg-beater, potato-masher, cake and biscuit cutters, etc. This is much cleaner than having them hanging around on nails collecting dust. In the third drawer can be kept the dish cloths, cup towels, kitchen towels, and bread cloths, and a small roll of clean linen or cotton in case of a cut or burn. Another thing I think worthy of mention, is always to keep adding to your stock of towels, if it is only one at a time.

To return to the kitchen. A long shelf will be found very convenient. In the centre of it place a good, reliable clock. This will save many a trip to another room. Then keep the lamps in daily (or rather nightly) use, at one end of the shelf, and see that they are cleaned, filled and put in place as soon as possible in the morning. Thread, thimble, and clothes brush can have their own places.

Below this shelf can be hung a match-scratcher, pincushion, scissors, buttonhook, almanac and a memorandum pad and pencil, so that you can jot down anything you need from your grocer and other things you might need when you go shopping.

Old newspapers can be used in a dozen different ways; for brushing off the stove, for saving the table when cleaning vegetables, and for setting hot dishes on. Have them in a rack just above the kitchen table, so they can be reached easily. Also, keep a can of Old Dutch or some other good cleanser handy. I find Babbitt's Cleanser an excellent thing for cleaning steel knives and forks, and always keep a can over my sink.

You can save many a hard day's work in Spring and Fall, by always keeping your cellar and shed clear. Don't let rubbish collect. You can always have a barrel or packing box when it is full, have it hauled away.

The same thing can be said of the rest of the house. If you have a place for everything and insist on things being kept in their places, you can always find anything you want without having to hunt for it.

LOST HIS HEAD ALSO

"What happened when you encountered the burglar?"

"He took my breath away."

"Anything else—anything of value?" asked the officer mechanically.

Whipping a Tired Horse Does Not Give Him Strength

YOU may whip a tired horse so that he will win a race or get his load over a bad spot in the road, but that does not add to his strength. In reality it further depletes his reserve of strength and leaves him exhausted.

And so it is with the nerves of the human body. You may by use of stimulants accomplish the work in hand or by deadening the nerves with narcotics you may stop the headaches.

Any temporary relief obtained is won at an enormous expense to the nervous system and you are left more exhausted than ever.

The introduction of Dr. Chase's Nerve Food was revolutionary in the treatment of nervous diseases, because it replaced the old idea of obtaining temporary relief with the new method of reconstructing the starved and depleted nerve cells.

Neither Do Stimulants Restore the Tired, Worn-out Nerves

The Food Cure

Mrs. A. North, Grand Street North, Brantford, Ont., writes: "Both my husband and I can speak very highly of Dr. Chase's Nerve Food, having used it with splendid results. My husband suffered from weakness and a run-down system, and became so bad he finally had to give up work. He also had spells of melancholia. He commenced using Dr. Chase's Nerve Food, and after a treatment of this medicine I never saw such a change in anybody. He is now able to attend to his work, and is enjoying splendid health.

"Before I started taking Dr. Chase's Nerve Food I was troubled with nervousness, sleeplessness and a pain around the heart. The Nerve Food built up my system, made me feel stronger in every way, and relieved me of the annoying symptoms from which I had suffered. We always keep Dr. Chase's Nerve Food in the house ready for use in case it is needed."

A little patience is required to follow out this building-up process, but this is the only way in which disease of the nerves can be really cured. The nerves are starved for proper nourishment. You supply the nutrition in Dr. Chase's Nerve Food. The results are certain, because you are working hand in hand with Nature.

As strength is restored the appetite is sharpened, digestion improves, you get the good of the food you eat, headaches disappear, you find yourself gaining in confidence, in vigor and in energy. You begin to have new ambitions, to enjoy your work and to feel again that life is really worth living.

Dr. Chase's Nerve Food

50 cents a box, a full treatment of 6 boxes for $2.75, at all dealers, or Edmanson, Bates & Co., Limited, Toronto. Do not be talked into accepting a substitute. Imitations only disappoint.

Cheery Walls Make Happy Homes

YOU feel their restful comeliness at once—inviting you to slip into cosy slippers, pull up your own chair to the fire, and find a new friendliness in home's attachments.

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AND WALLS

quickly change dull, dreary rooms to ones you like to linger in. Whether you prefer plainness or a to ch of ornament, you will find many to please you in the 2,000 styles and Period designs to choose from Easy to put on over plaster or wood, the joints fit in snug so they cannot show or come away. Last without repair as long as your house. Shall we send you the complete Ceiling Catalogue M. F.

Write for it!

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I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer. Address

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DO NOT NEGLECT THE EDUCATION OF THE CHILD

The education of the child is one of the most important events in connection with his and her life. Other things being equal the trained mind will succeed over the untrained every time. Every child is justly entitled to a good start in life. It is the duty of the state to see that any boy or girl born under its bag and of whom it expects loyalty should not be handicapped in the race, for want of proper training.

In these days when labor is not equal to the demand and many people are striving to increase their output in production, ac occount of those prices of farm products the tendency is to keep the boy or girl out of school in order to lll the breach. This is usually intended, of course, to be only a temporary expedient; but unfortunately it often becomes a habit and when the least cause presents itself and a little extra help or even a permanent hand is needed, the boy or girl at once becomes the one upon whom the burden falls with the result that too often their education is cut short just at a time when they are taking the greatest interest in their work and when the best use of their time could have been made.

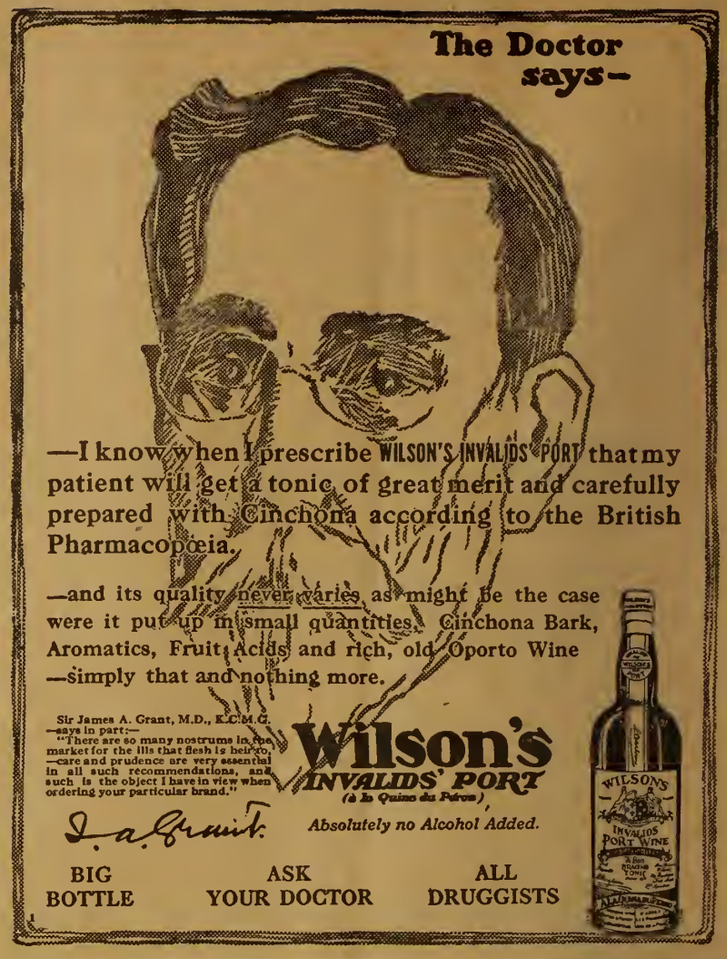
It is important that the work of the farm be done and well done at any time, and particularly important just now in these days when our National as well as our personal safety seems to be hanging in the balance but even with these conditions hovering over us the question of curtailing or cutting off altogether the balance of our children's education and thus putting a handicap upon their chances in life afterward should be a matter of serious consideration before any step is taken in that direction and then only when every other alternotive has proven eneffectual to overcome the difficulties before us.

One of the strongest arguments against beginning a course of restriction on a child's education is the ease with which the practice grows: Having found out from experience that the boy or girl can fill an important place that has become vacant ti seems but a little thing that a day off from school now and then will amount to anything serious, and even if it should, it is likely to be held that an extra month or so, or a year, if necessary, will easily atone for the time that has been lost. The difficulty, however, is that the, month or so, or the extra year never materialies and in many cases the school days of the boy or girl is ended.

Again, once the boy or girl gets behind his class and has to take a lower grade than his former classmates, he or she is likely to become discouraged and lose their taste for an education and even though the parents are willing and anxious that the studies of the boy or girl should be resumed the difficulties in the way are frequently insurmountable and the child's education and mind training so far as his school advantages are concerned practically collapse altogether and the first step in curtailment proves to be the beginning of the end.

It is a well known fact that the "big boy" is usually a failure in the common school and that where other duties so interfere with his early studies that he becomes a "back number," unless possessed of more grit and determination than the average boy, he will go through life with the handicap of his early days resting upon him and from the grip of which he is never able to free himself.

These things are not fancies, nor are they theories; but rather the actual facts as they have been known to work out in the lives of countless number of boys and girls all over the land; hence the great responsibility that rests upon parents and guardians of children should be fully realized and they should squarely face the issue and allow nothing so far as is reasonably within their power to side-track them in giving their children a fair chance to make good in the matter of obtaining a good education.


The Doctor says—
—I know when I prescribe WILSON'S INVALIDS' PORT that my patient will get a tonic of great merit and carefully prepared with Cinchona according to the British Pharmacopœia.
—and its quality never varies as might be the case were it put up in small quantities. Cinchona Bark, Aromatics, Fruit Acids and rich, old Oporto Wine —simply that and nothing more.
Sir James A. Grant, M.D., K.C.M.G. says in part:—
"There are so many nostrums in the market for the ills that flesh is heir to, —care and prudence are very essential in all such recommendations, and such is the object I have in view when ordering your particular brand."
Wilson's
INVALIDS' PORT
(à la Quinta du Paron)
Absolutely no Alcohol Added.
BIG BOTTLE
ASK YOUR DOCTOR
ALL DRUGGISTS

JOHNNYCAKE, A WHEAT SAVER

If we want to do our bit till "Johnny Comes Marching Home" we must eat all the Johnnycake we can and leave the wheat to go over the water. At the same time we must remember that while corn is rich in oil it contains not quite so many mineral salts as wheat.

Therefore, if we confine ourselves exclusively to a corn diet, we must drink plenty of milk with it, and eat a little more heartily of peas and beans.

The Southern army in the American Civil War fought for five years on a corn diet, and it is as good to golf on or hike on as it is to fight on. Here is a good old time recipe for Johnnycake, which, as the old lady who made it said, "tastes like more":

One pint of buttermilk.
One pint of meal (white).
One teaspoonful salt.
Three eggs.
Two tablespoonfuls melted butter.
One light teaspoonful soda.

Beat the eggs together till light, add the buttermilk, and then the meal sifted. Beat well together. Dissolve the soda in two tablespoonfuls of boiling water and add this and the butter and salt to the batter, stirring well together.

Pour into a greased, shallow baking pan and bake in a moderately quick oven for half an hour.

MAKING LAUNDRY SOAP AT HOME

A good grade of laundry soap can be made in the home from drippings, rancid oils, and fats that ordinarily are wasted. Home made laundry soap may be made by using seven pounds of solid fat and one pound of lye dissolved in 11 cups of water.

Clarify and strain the fat and allow to harden. The fat is warmed enough to melt it and the lye solution stirred in until the mixture becomes a creamy mass. It is then poured into moulds to harden. This makes a firm soap for general kitchen use at a small cost.

All small pieces of soap should be saved and kept free from dirt and dust. When a sufficient number has accumulated, it can be made into soap jelly or solution. This can be used for dishwashing, woodwork, soaking clothes, washing flannels—if made from neutral soap—and scrubbing.

One bar of soap or its equivalent in small pieces may be added to two or three quarts of water in the preparation of soap solution. Shave the soap and put into a sauce pan with cold water. Heat vradually for one hour until the soap is dissolved. A tablespoon of ammonia, turpentine, or kerosene may be added, if desired. One bar of soap or the equivalent in small pieces and one quart of water is recommended in the preparation of soap jelly.

A good liquid cleaning and bleaching agent can be made in the home easily by the use of one pound sal soda dissolved in one quart of boiling water and one-fourth pound of chloride of lime added to one quart of cold water. Mix thoroughly. Let stand for several hours. Pour off the clear liquid. Boil and keep in cool place.

SUGGESTIONS ON SUBSTITUTES

No matter what methods of food conservation are employed in any country, it has been proven during wars of far less magnitude than the present conflict that the vast problem of feeding armies and civilians was only solved by an intelligent, individual effort on the part of every man, woman and child.

The Canadian-wide plea at present being sounded from coast to coast is not necessarily an inference that the individual has been wasteful, but it is a clear clarion call for the co-operation of every citizen to conserve food.

The armies and civilian populations of the allied nations overseas need all the wheat, flour, beef and bacon that Canada can supply. And the

WANTED

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plea is that Canada produce all it can, waste nothing, and also shift the consumption as much as it is practicable from wheat, beef and bacon to other foods. These other foods will be just as wholesome, but are not suitable for shipment.

Body-Building Foods

Foods which furnish material to build the body and keep it in repair. Use in each meal at least one of the following:

Lean meat, poultry or fish.

Eggs—in any form.

Milk—whole, sweet, sour, skim or buttermilk.

Cheese—in any form.

Cereals—flours and meals from oats, wheat, corn, rye, and barley in bread and breakfast foods.

Legumes—dried peas and beans.

Nuts.

Well-Balanced Meals

A well-balanced dietary supplies body-building, heat-and-energy-supplying and regulating substances in the right proportion and in sufficient quantity. Simple meals can fulfill all requirements. It is wiser to spread the variety of food over many days than to provide many kinds of food at each meal every day. Here are examples of simple but well-balanced meals:

1. Fruit, oatmeal, and whole milk.
2. Egg, bread and butter, fruit or vegetable.
3. Bread, cheese, tart, fruit.
4. Baked beans, brown bread, apple sauce.
5. Mutton, potatoes, second vegetable, fruit, batter pudding.
6. Milk soup, corn bread and syrup.
7. Whole wheat bread, whole milk, prunes.

These seven meals are not ideal for all ages and conditions, but they meet the needs of healthy, active adults.

SCHOOL LUNCHEONS FOR THE CHILDREN

The task of putting up an appetizing and nourishing lunch is not an easy one unless an interest is taken in it and the value of dicerent foods has been studied.

The most important factor is neatness. No one can relish a dinner which has been hastily thrown into the box and is made up of odds and ends or left-overs. Children envy the child with a neat and attractive-looking lunch box. It stimulates the appetite and makes the cold lunches more desirable.

The large dinner pails or boxes are generally objectionable. Children prefer to carry small ones, therefore it is necessary to economize space. Dishes should be bought which will fit the box so as to take up the least space. Folding drinking cups should be used unless paper cups are found more satisfactory as they taken up less room. Waxed paper is indispensable in a well-made lunch. Rolls of this paper may be found on five or ten cent counters, or still cheaper, it may be saved from breakfast food and cracker boxes. All foods, such as sandwiches, cake, crackers, cookies and cheese, should be wrapped in waxed paper.

Let there be lots of variety in the sandwiches and desserts and always have plenty of fruit. Following are suggestions for a number of lunches which are inexpensive and need but little time to prepare: Salmon sandwiches, cheese, cup custard, fruit, cake and dates. Lettuce sandwiches, boiled eggs, chocolate pudding, oranges, cookies. Graham jelly sandwiches, pressed beef, celery, stewed fruit, pie. Peanut butter sandwiches, ham, bean salad, fruit, cake and figs. Ham sandwiches, pickles, rice custard, fruit, cake and graham crackers.

SUGGESTIONS FOR MOTHER

We are exhorted to use corn-meal in these war times. Here is a good johnnycake, made without eggs: Mix and sift together a cupful each of corn-meal and flour, a third of a cupful of sugar, a teaspoonful of salt and a half teaspoonful each of soda and baking powder. Add gradually a cupful and a half of sour milk. Beat well and bake in a well-lreased, shallow pan in a moderate oven.

Hallowe'en festivities are incomplete without pop-corn. Before popping, put the corn in a colander and plunge it into a pan of water, then drain. The corn will be whiter and better when popped, if this plan is followed. When making pop-corn into balls, have a pan of dry corn and add it to the corn balls as they are being formed. They will look better and form much more easily, as they are not so sticky to work.

Folks think there is nothing quite so good as spiced apple jelly. To make, pare, core and wash the apples, cook until soft and strain. Put into a muslin bag ten sticks of cinnamon bark, eight cloves and six allspice. Drop this into two quarts of the apple-juice and bring slowly to boiling point. Taste this frequently and when the desired spicy flavor has been obtained remove the bag add sugar and proceed as in making other jelly.

A subscriber claims that she is able to make excellent apple butter without long, tiresome stirring. She has a big fifty-pound lard can which, however, has never been used for lard. Into this she puts alternate layers of pared, sliced apples and sugar, about eight pounds of sugar to the canful of apples. Then she puts the lid on tight, stands the can on the stove and listens for it to begin to cook. When she hears the first faint boiling she pushes it back where it will cook very gently and leaves it undisturbed for six or seven hours. The apples will be found a well-cooked mass that keeps well.

Potato omelet is a good supper dish. To make it, cut bacon in slices, then cut in cubes; there should be two-thirds of a cupful. Fry in an omelet pan until crisp and add two cupfuls of cold boiled potatoes cut in dish, one teaspoonful of salt and one-fourth of a teaspoonful of pepper; cook slowly until thoroughly heated. Beat three eggs slightly, add three tablespoonfuls of milk, one-fourth of a teaspoonful of salt and a few grains of pepper. Pour over the potatoes and cook until set. Fold on a hot platter the same as any omelet and garnish with parsley. A good corn-cake is just right to serve with the omelet.

7 Piece Bureau Set 20c.

An Elegant Bureau Set of 7 Pieces in Eyelet Embroidery, consisting of 6 Doilies and a large 18 inch Traycloth to match, all on Fine Quality. Round. Thread Natural Bleached Art Linen, only 20c. Book of latest embroidery designs, containing other Bargains free with order

The Women's Supply Co., Reg. Dept G
747 St. Catherine St., West,
Montreal, Que.

Why Gold Dust so quickly loosens dirt

DIRT sticks because it is held by grease. But cheer up! "Gold Dust dissolves the grease."

If you want to prove this why don't you try Gold Dust the next time you wash the dishes?

See if you aren't really surprised at the way Gold Dust fairly *slips* the grease off. See if the time saving doesn't gratify you.

Keep right on using Gold Dust wherever you find troublesome dirt. For example in scrubbing the kitchen floor, particularly around the range where some grease may have spilled.

In fact this is a good housekeeping rule: "Use Gold Dust for all dirt that you can't brush up or dust off." And Gold Dust is for sale everywhere in large and small packages.

GOLD DUST

The Busy Cleaner

THE N.K. FAIRBANK COMPANY
LIMITED, MONTREAL

Quality Counts

Quality alone is responsible for the tremendous increase in the quantities of Purity Flour used year by year. This tribute to the supremacy of

PURITY FLOUR

will, we hope, influence you to place a trial order, if you are not already using it.

More Bread and Better Bread---and Better Pastry, too.

3

POULTRY FEED

The question of feed for poultry is becoming serious. Corn is practically off the market, oats high in price, barley and buckwheat very scarce as well as high. Wheat, the most popular poultry feed in Canada at any price, should not, under present conditions, be used for poultry if it is fit for milling purposes, for the prospects are that this year's crop will leave the world's supply of wheat still short and it will be necessary to save all suitable wheat for human consumption. Poultrymen will therefore have to look for a substitute.

Before looking for other grain feeds, it might be advisable to suggest that more mash feeds be used in the ration. During the summer both the chicks and the layers could be fed a larger proportion of dry or moist mash and less grain than is usually advised. Mill feeds such as shorts and bran are easier to get and cheaper than the grain feeds, and when the birds are on range could be eaten in larger proportions.

For the grain part of the ration it might be ecessary to use oats, barley, buckwheat, etc., when these are procurable at reasonable prices. In many places these cannot be obtained; here the screenings from flour mills and elevators should be used.

There are considerable buckwheat screenings procurable at a reasonable price at the prairie and Port Arthur elevators, which make good feed. At the middle eastern flour mills there are quantities of screenings taken from milling wheat that would form almost an ideal grain mixture and could be purchased at about the price of shorts. In fact, most of this class of feed is ground and mixed with the mill feeds and as a consequence is lost as a grain feed for poultry.

Such feeds make very suitable rations especially for growing chicks or for the summer feeding of laying stock and they are much more economical than wheat. In an experiment conducted at the Cap Rouge Experimental station screenings at two-thirds the cost of good wheat produced eggs at less cost than did the wheat. Some of this feed may be fed whole and some ground for a mash.

Samples of feeds and prices in car lots have been submitted which, even with a reasonable commission could be retailed at a comparatively low price. Some of these samples are—Buckwheat screenings, $25.00 per ton at Saskatoon, this is a cracked feed, 96% wild buckwheat and cracked wheat, 4% weed seeds of various kinds. It is a good rearing feed and may be fed whole or ground. Another sample, was quoted at $1.90 per cwt. f. o. b. Toronto; a sample of small wheat with a few oats and a trace of wild buck wheat, price $2.00 per cwt.; two samples somewhat better at $2.10, a good sample of burnt wheat at $2.50 and a better sample at $2.90.

These are all satisfactory feeds and the prices quoted show that compared with wheat they are cheaper. They could be used as whole grain or as a mash feed. In some of them weed seeds will be found, and care must be taken to feed so these will not spread. Local flour mills in Ontario and Quebec submitted all the samples but the wild buckwheat screenings. No doubt, feed of this nature could be secured at any mill making flour, and if poultrymen would ask for it, more of it would be available.

For British Columbia and the Maritime Provinces, the buckwheat screenings seem the best available and a little co-operation might be the means of securing this feed in car lots.

Poultry that has been eating good wheat and corn may not at first take to the screenings, but with a little time ad patience they will eat it readily. A car load of it was received at the Experimental Farm, Ottawa, at a cost of $33.00 a ton. It has proven very satisfactory for growing chicks and for summer feeding of hens. It may not be ideal for litter feeding in the winter, but for fattening and mashed feeds is most satisfactory.

APPLE SYRUP

A cheap and palatable syrup for the table or cooking use may be made in the home with comparatively little trouble, from apple cider.

Directions for making this are given in the Year Book of the Department of Agriculture for 1914, page 230, the essentials of which follow:

Select fresh cider of good quality and to every 7 gallons of cider add 5 ounces of powdered calcium carbonate which can be obtained from any druggist at slight cost. After adding the carbonate stir the mixture well and heat to boiling in porcelain lined kettles not more than two-thirds full. Boil for about 5 minutes, then pour into two-quart jars, galss pitchers, or other glass containers. Set these in pans of hot water to allow slow cooling. As soon as sediment has settled out—this will take 24 hours or more—turn off clear liquid and again heat to boiling in porcelain lined kettles, this time but one-third full. Boil rapidly until liquid has reached about one-seventh of its original volume, and is of the consistency of thin syrup, then cool slowly as before. In a day or so, syrup should be perfectly clear and can then be botteld for future use.—Evelyn G. Halliday, Colorado Agricultural College, Fort Collins, Colo.

"C. V. B." THE CANADIAN ESPERANTO.

By Augustus Bridle

Canada speaks about forty languages. Newspapers are printed in at least twelve of these. No living man in Canada, however great a scholar he may be, can read equally well even, if he can read at all, every one of these newspapers without translation. There are thousands of people in Canada who are unable to communicate with the great mapority of Canadian people by means of any document they can read. With all our melting-pot machinery of commerce and railways and newspapers and colleges and schools and banks and elections, we have never yet designed a document that all people in Canada could be made to understand equally well for all necessary purposes.

But there is a Canadian Esperanto. There never has been one before it. The document conveying this universal language may be signed with all manner of names representing any of the races living in Canada.

The name of this Esperanto document is,

Canadian Victory Bond.

It is quite likely that this document will be signed with names from most of the languages spoken in Canada. What it contains will be understood in all the currencies of all the races we have. The $50 written on the face of it wil lbe translated into £. s. d., into francs, into francs-tireurs, into pfennigs, into whatever stands for the commonest unit of value in languages whose currency would be a puzzle to an average banker.

Once it is explained and signed and delivered, that Canadian Victory Bond becomes a plain passport to any manner of man into financial citizenship. With this document in his hand he knows, whatever language he naturally speaks, that the Government of Canada representing the nation and the resources and the credit of Canada among the peoples of the world, stands ready to pay him $50 plus whatever interest may have been earned on the bond between the time it is sold to him and the date at which he wishes to transform it into cash, if that time should happen to come before the date written on the bond has expired.

No other document has ever done this. Even the Bible is limited in translation to a majority of the languages spoken in this country. The act by which any man or woman gets one of these documents is one which may be impressed on the imagination even more vividly than the voters' list or the lien note on a self-binder or the mortgage on a chattel. Properly understood it means to the man of whatever race-origin possessing it that he has lent as a citizen, $50 to the country whose laws he obeys, whose flag he respects, and whose institutions enable him to live.

One of Robert J. C. Stead's recent poems called The Mixer, variously describing the peoples whom Canada is assimilating says in one stanza:

"They are coming from the valley,
from the prairie, from the hill,
They are coming from the 'May I' to
the country of 'I WILL'!
And for some the smart of failure,
and for some achievement's
crown;
As I roll 'em out Canadians—all but
the yellow and the brown."

In this case even the poet with his universal ideas is outdone by the Esperanto of the war bond. The Canadian Victory Bond invites even the yellow man and the brown man to put down their names.

STARCH CONTENT NOT ONLY REQUIREMENT OF POTATO SUBSTITUTE

Rice and other cereals, and cereal preparations such as macaroni, have come to be referred to as "potato substitutes." In so far as we are concerned with the starch content, the foods named may be so regarded. Their inadequacy in other respects should be as well understood.

In the digestion of foods there are set free alkaline salts known as base-producing elements, and acid-producing elements. The perfect combination of foods is that in which there is at least enough of the base-forming elements to neutralize the amount of acid-producing elements set free, thus changing them to harmless compounds which the body them thorws off. A familiar illustration of such an ideal combination is the serving of potatoes with meat. In an average serving of meat the excess of acid-producing elements is neutralized by the excess of base-producing elements in an average serving of potatoes. It is an interesting fact that an excess of foods of the base-producing type is not in any sense objectionable. Such an excess of acid production is harmful because the natural reaction of the blood and other body fluids is alkaline. Among the plant foods conspicuous for the extent of their use and which contain an excess of acid-producing elements are rice and other cereals and cereal preparations such as macaroni and hominy. Acid producers include meats, fish and eggs from among animal foods.

Base-producers are fruits, vegetables and milk. That fruits have an acid taste but are regarded as base-producing foods may seem paradoxical. It is, then, obvious that while among fruits and vegetables there may be quite free substitution, yet rice which contains an excess of acid-producing elements cannot take the place of the potato which gives rise to base-producing elements. The substitution of rice, because of its starch content, must be accompanied by the addition of succulent vegetables.—Inga M. K. Allison, State Agricultural College, Fort Collins, Colorado.

KEEPING APPLES

The keeping of apples in good condition is entirely a matter of environment, and if the querist had given particulars as to how the fruit has been stored in the past, it might have been possible to definitely point out wherein the surroundings were unsuitable. Both Tolmans and Russets should keep well into April and May, and I find no difficulty in so doing. I have even kept Wealthy, a variety whose season ends in January, into May, though of course the flavor was somewhat off. The fact that the querist's apples shrink shows that his cellar is too warm and dry, thus causing the natural moisture to evaporate from the fruit. Thus, a cellar with a furnace therein would be a very unsuitable place for fruit storage. Apples keep best when placed in barrels as soon as picked and cooled off; the barrels heads may then be laid on, or, better, two or three thicknesses of newspaper, which will keep more or less air from the fruit and prevent evaporation. Apples in bins will also keep longer if covered with newspaper, old bags or carpet. The cellar should be kept as cool as possible, and with this object I do not close the windows until very cold weather is due, while those on the south side are left open a week or so longer. If, about the time the snow melts in spring, you search under the apple trees, you will probably find a few fruits safely tucked away under leaves, grass, etc., as firm as when they were upon the tree. They have been cool and moist all winter, and this fact give us a hint as to what conditions are requisite for their good keeping.—F. R. R.

WORMS IN HORSES

There are numerous useful vermifuges and blood tonics. The most convenient and effectual is the following: 1 drachm sulphate of iron, 1 drachm tartar emetic, 2 drachms linseed meal, mix together and give as one dose, repeating night and morning for a week. Give it in grain feed. After the powders are finished give a purgative of oil and turpentine as follows: 1 ounce spirits of turpentine and 1 pint raw linseed oil, mixed together. After three weeks, repeat the entire treatment, to catch the young worms previously left in the bowels in the form of nits or eggs, and which have hatched since.

THE EFFICIENT HEN

Then hen is an economical transformer of food into a finished product. A hen laying 200 eggs in a year is not at all unusual. A four pound hen laying this number will produce six times her weight in eggs. To do this she will require from seventy to eighty pounds of food. To acquire success it is necessary:—

1. That the food be properly selected.
2. Tat it be fed in correct proportion and in a judicious manner in order that her digestive organs may be kept in good condition.
3. That she be fed enough so that she bas plenty of surplus for egg production.

Feeds are scarce and high in price. If your live stock are properly housed and their comforts properly attended to, they will not require so much food to keep them in good condition. A few hours spent in attending to necessary repairs to buildings, in the way of banking to keep cold drafts from getting under the floors, dusting and washing the windows and replacing broken panes and closing openings that admit too much cold, will be time and money well spent. The merciful man is merciful to bis beast. No merciful man should rest comfortably until he knows that the dumb brutes of which he has the oversight, are comfortably housed, bedded, watered and fed.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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An Imminent War Time Condition

The Maritime Provinces Must Bread Themselves and Produce Surplus if Possible

Men, munitions and money, we are told, are the three main factors that will ultimately decide whether Great Britain and her Allies come out of the present gigantic struggle in which they are engaged with victory perched on their banners or crest fallen with defeat. In other words the nation that can best uniformly maintain these three factors the longest, is bound to be the nation that will triumph in the end.

When the worst comes to the worst, a nation may say to a man "Go fight" and he must go. The nation may also say "Give" and men must give. Many lines of munition can be speeded up at short notice and an adequate supply may be thus maintained.

But want of "food" the main and most essential of all munitions. To increase the food supply, preparation must be made many months before the harvested product is needed for consumption. The land must be plowed, cultivated, fertilized and seeded. Then comes first the blade and after many days the full corn in the ear, and the proverbial bread cast upon the waters returns a manifold yield.

In the line of food supplies, grains, fats and sugar are the essential and most urgently needed for the sustenance of our armies in training, and in the field, as well as the masses of munition workers and others who are not producers of food.

Of the food supplies mentioned in the foregoing paragraph, the farmers of the Maritime Provinces can lend a hand in conserving and production of grains and fats, and of these two, grain is the most urgently needed and it in turn is the one that requires the longest time to prepare for an increase. The first grain commodity for consideration must be wheat, the predominant bread grain. From a European bread-stuff point of view the other cereals are substitutes to be used in mixing with wheat, and a certain amount of wheat is essential. Herbert Hoover, the United States Food Administrator has compiled statistics which show the wheat situation in France, Italy, the United Kingdom and Belgium to be as follows:—

Total yearly pre-war importations	380,804,000 Bus.
Total average production	590,685,000 Bus.
Total estimated production for 1917	393,770,000 Bus.
1917 deficiency	196,905,000 Bus.
Total imports required to maintain normal consumption	577,709,000 Bus.

The total export surplus of wheat from the 1917 sowing in Canada and the United States is only 230,000,000 bushels.

In order that England and her Allies may be adequately supplied with wheat, they must necessarily import and shipping must be available to transport it. The world's shipping is, however, already too short to afford sufficient tonnage to traverse the longer routes to India, Australia and Argentina, which routes require three times the time of the one to North America, and thus three times as many ships to transport the same quantity. Furthermore, the American route is the best protected.

While our ship building may in time overcome the destruction, in the meantime ships must be diverted from the longer to shorter routes to fill the gaps made by submarines.

The Mother Country and her Allies, therefore, look to Canada and the United States for the major portion of their wheat supply, but Canada and the United States supplies, upon a normal export basis, approximately 330,000,000 bushels short of the Allied needs. This shortage may however, be lessened by economy on the part of our citizens through the use of wheat substitute and an honest effort on the part of the farmers to increase wheat production.

Mr. Hanna said at a recent conference with the Ontario Department of Agriculture in Toronto, "I want to tell you gentlemen today, that food is being sent across the Atlantic regardless of the fact that in eight months from now the people of the United States and Canada, should the war go on—and there is nothing to indicate that it will not—the people of the United States and Canada will be on rations, whether they like it or not, and no one will object if rations will save the situation the suffering that is today indicated by the conditions across the sea."

This is a true state of affairs. What will our New Brunswick farmers do to relieve the situation? Concerted action is immediately needed.

The Maritime Provinces are flour importing provinces despite the fact that wheat can be grown successfully in every one of their counties. Many of our farmers have found it more profitable to grow other crops and purchase their flour requirements. The time has now come when the question of profit must take a secondary position to that of necessity. We have no assurance that in order to supply more urgent needs, an embargo may not be placed on the shipping of wheat or flour to provinces that can to a certain extent "bread themselves", if they do not put forth an honest effort regardless of cost.

The word "cost" must never figure in the prosecution of the present crisis to a successful outcome for England and her Allies. It has already cost many of our homes the blood of their manhood. Shall the farmers of the province not rally to the call by producing more wheat and thus help to diminish the quantity we must purchase from the great wheat fields of the west. Every bushel of wheat that the West can thus save for export across the Atlantic will be an extra bomb thrown into the camps of our enemies. The 1917 season was not favorable to the best results in wheat growing in the Province of New Brunswick and consequently many farmers who gave wheat growing a trial did not realize the results they anticipated. Our failure does not by any means spell defeat, and it is an incumbent duty on every farmer in the Province, to grow as big an average of wheat as he possibly can in 1918. The farmers can only do a part and if they do that part well, Providence will do the rest. Farmers who wish to win the war will do their utmost along the lines suggested, and consequently there will be a demand for large quantities of seed wheat for use next spring.

N. B. Municipal Councillors Confer With Their Dept. of Agriculture

Anticipating this demand, Hon. J. F. Tweeddale, New Brunswick's Minister of Agriculture, called a meeting of the municipal county councillors of the Province in the Government Building, Fredericton, on November 20th, to place the matter fairly before them and invite their assistance by using their efficient organization in ascertaining the quantities of home grown wheat seed that is available, the quantities that must be imported to supply the demand and in the distribution of the supply in such a way that every honest effort put forth by our farmers will be helped.

There is no organization in the Province that so thoroughly covers every district as does the Municipal Council.

The response to the call was very encouraging. Councillors representing many districts of the Province received an insight into the seriousness of the situation. Many of them did not realize before coming to the meeting that the demand was so urgent, and openly expressed themselves as being heartily in accord with the steps the Department of Agriculture has taken, not from the political standpoint, but purely and simply as a pressing need that must be attended to without delay.

Mr. Carter, Chief Superintendent for Education for the province was present and offered the Department of Agriculture and the Municipal Councils every possible assistance through the agency of the various teachers, pupils and officers of the schools in the province, a propostion which was readily accepted. The plan of campaign will necessarily require publicity in order to bring the seriousness and urgency of the situation to the attention of every farmer. The press will be asked to co-operate in this work. Circulars explaining the situation will be placed in every home, and the clergy of all denominations have already expressed their willingness to give the matter all the publicity they can.

A blank form will be placed in the hands of every farmer, who will be expected to fill it in and return it to the Secretary of School Trustees, school teachers, or councillors for his district. This blank form will contain questions to the home supply of seed wheat and the quantity that must be purchased to supply the demand.

Premier Foster attended the meeting and took an active part in the discussions; the following resolution was carried unanimously:—

WHEREAS the supporting of the soldiers fighting in the trenches is paramount

AND WHEREAS the necessary support must be forwarded to the wives and families of the soldiers drafted in the Allied Nations,

AND WHEREAS wheat and fats must be supplied by Canada, and in view of the fact that a great shortage of wheat is likely to ensue.

Therefore, be it resolved, that we, the representative of the Municipal Councils, do hereby pledge ourselves to urge our respective Municipal Councils to take immediate action in ascertaining the acreage and the amount of seed wheat needed, for such acreage to be sown during the spring of 1918.

And further resolved, that we will recommend to our respective Municipal Councils the favorable consideration of financing the purchase and distribution of said seed grain.

And further resolved, that we will, within fifteen days from date, ascertain and furnish the Provincial Department of Agriculture an estimated quantity of seed required for said acreage in the respective parishes.

Moved by P. S. Melanson. Seconded by J. W. Smith.

Carried.

The N. B. Legislature at the last session, anticipating such need placed upon the statute books, an act whereby municipalities were empowered through temporary loans, to provide food, fuel, seed or other necessities. The City of St. John has already availed themselves of this and coal was purchased, and delivered in small quantities where required. The Department of Agriculture will locate and secure the necessary supply of seed grain and then it can be delivered to the municipalities in car load lots at cost, and be distributed according to regulations arranged.

Farmers who have a supply of good

(Continued on page 156)

Finishing Lambs for the Block

By E. S. Archibald, Dominion Animal Husbandman

No branch of farming offers better inducements than that of sheep raising, and no other class of live stock will make greater profits. Markets for lambs, mutton, and wool are high, and will remain so for many years. With lambs selling at $9 to $11 per cwt. live weight in the fall and from $12 to $15 in the late winter, a large profit is assured. Add to this wool (unwashed) seeling at 58 cents to 68 cents per pound, and sheep raising becomes the most profitable farm industry. There is every possibility for the intelligent farmer to establish a flock even at present prices and make 50 to 75 per cent net profit per annum on his investment. There are, however, many possible means of losses, such as light lamb crops, heavy mortality in lambs and ewes, feed waste, lamb stunting, intestinal parasites, and many similar troubles which, in the case of the careless or indifferent shepherd, will convert these large profits into an even greater loss. One of the most common losses to the farmer is due to improper marketing. Only well-finished lambs can top the markets and bring the maximum profit.

On the Dominion Experimental Farms some interesting results have been obtained from a number of experiments in lamb feeding conducted during the last few years.

The large percentage of Canadian lambs are marketed in the fall direct from the pastures, which is undoubtedly the most profitable practice, providing the lambs are well finished on grass alone or on an added grain ration. All the lambs from the farmer's flock are usually lifted at the same time, which means that the well-finished lambs of good weight must help to sell the light, thin lambs, which may be as well bred but, being late lambs or twin lambs, have not done as well as their flock mates. Well finished lambs of uniform weight invariably command a higher price than mixed lambs varying in size, weight and finish; hence it is always more profitable to hold the lighter lambs and sell only those of uniform weight and finish. Again, the selling of the most of our Canadian lambs during the fall months practically always causes a slump in price. Lambs not required for immediate consumption are held in cold storage to the profit of the wholesaler in view of the usual increase in price of from $1 to $3 per hundred pounds between the months of November and April.

When the farmer appreciates these two conditions, the lamb trade will be revolutionized and the farmer will finish his work and reap full profits for foodstuffs consumed by, and labour expended on, his sheep. Many farmers, with abundance of roughage, can well afford to finish from one to three carloads of lambs during the winter months, thereby making top market prices on the farm produce and a good margin of profit in addition. Realizing the existense of such conditions all over the Dominion, a large amount of investigational work along these lines has been conducted on the Dominion Experimental Farms throughout Canada. Details of this work may be seen in the annual reports; however, a brief summary of the work to date may be timely.

. Profits in Winter Feeding Lambs .

Profits in Winter Feeding Lambs

In the seven years' work conducted on the Experimental Farms system, the profits on the winter finishing of lambs have ranged from 25 cents per head to $3.82 per head over the cost of feed. In other words, the Experimental Farms and Stations have purchased unfinished lambs on the open market or from drovers and, after charging good prices for marketable farm feeds and cost prices for other roughages, have made from 3 to 33 per cent on the investment in the lambs, labour not included. Even allowing a fair margin for labour, this is as profitable a line of feeding work as can be carried on, and shows a return on investment greater than is usual in the finishing of steers or shoats.

The sex of lambs to finish for the block is at this stage of the sheep industry in Canada a most important consideration. Owing to the great scarcity of breeding ewes and the immediate needs of enlarging the output of the sheep industry, **all ewe lambs fit for breeding purposes should be saved** and held over for breeding when shearlings. Aside from being a national duty, this is also an excellent investment, and is appreciated as such by the farmer.

All good pure-bred ram lambs are in great demand, and should be used as breeders. All inferior pure-bred rams and all grade ram lambs shou'd be castrated early and finished for the block. The high-class market always discriminates against unaltered ram lambs and against undocked lambs. The wise feeder also realizes that greater and cheaper gains follow these two necessary simple operations.

The class of lamb to buy depends largely on the lambs available, and market requirements. Usually, the well-bred lamb showing plenty of constitution and thrift and weighing from 60 to 80 pounds is the best stocker lamb to put into winter quarters.

Lambs weighing from 80 to 100 pounds, if thin, may be profitably put in the feed lot for a short finish, and if good fall pastures are available this may be as profitable a line of work as any. The finished, heavy lamb weighing from 80 to 110 pounds should never be purchased for feeding purposes. The time when greatest profits can be made in purchasing lambs is usually between the months of August and November. However, the condition of the pastures and of the lambs themselves, as well as the markets, will regulate the time for purchase. **The proper time to sell the lambs is when they are finished,** whether this be November or April or any intervenin gmonth. This applies also to the selling of lambs off grass. Finished lambs will make small gains at a very high cost per pound, which cost will usually be far in excess of the market price at that season. In addition to this, the markets are demanding a well-finished lamb, not overdone, and ranging from 85 to 105 pounds live weight, depending upon the breed and season of the year. This, of course, does not apply to the young-lamb trade of the spring and early summer.

The following table shows the average profits over the cost of feed in the feeding of lambs on the Experimental Farms throughout Canada during the past seven years:—

AVERAGE PROFITS IN WINTER LAMB FEEDING

Experimental Farm at	Number of years	Weight of lambs when put in feed lot	Buying price per cwt.	Selling price per cwt.	Spread between buying and selling prices	Profit over feed per lamb
		Lb.	$ cts.	$ cts.	$ cts.	$ cts.
Ottawa, Ont.....	5	99	6 65	8 25	1 60	1 38
Charlottetown, P.E.I...	5	63	5 57	7 85	2 28	1 22
Nappan, N. S.....	3	84	5 80	7 83	2 03	0 90
*Lennoxville, Que.....	1	90	6 00	9 00	3 00	1 65
Indian Head, Sask.....	1	70	6 00	6 00	....	0 34
Lethbridge, Alta.....	5	69	5 65	7 67	2 01	1 35
Average	3	79	5 79	7 50	1 71	1 05

* Most of the lambs at this Stati on finished on pasture.

This table shows an average profit over feed—on Experimental Farms and Stations throughout Canada, in the feeding of many carloads of lambs—of $1.15 per lamb when the spread between buying and selling prices is approximately $2.10. Since the spread between buying and selling prires has exceeded this amount during the past two years, and promises a still further rise during the next two years, one is safe in anticipating a reasonable profit in lamb finishing, in spite of the very high price of lamb at the present time. If this applies to the purchasing of stocker lambs for winter feeding, it would apply doubly to the farmer or shepherd having lambs in an unfinished condition. It is always profitable to finish lambs before putting them on the market.

Feeds for Winter Lamb Finishing

The selection of feeds for winter use should be to replace good pasture grass in every way possible. Grass is the ideal ration for sheep, not only in cheapness but also in nutrition, palatability, and succulence.

A large number of feeds have been tried in this work, and these may be briefly treated under the four headings: dry roughages, succulent roughages, grains, and mill feeds.

Of the dry roughages, alfalfa hay is an easy leader, closely followed, however, by fine clover hays and fine mixed hays. At the Experimental Station, Lethbridge, Alta., it has been found that alfalfa hay, when properly fed with succulent roughages and grain, is worth $21 per ton for the finishing of lambs. It has also been found that alfalfa hay alone or with meal is less profitable than when succulent roughages, such as roots (turnips and mangels) or green oat sheaves, are also fed. What applies to the rich alfalfa hay also holds true with clover hays. Good quality clover hay is worth from 10 to 50 per cent more in lamb feeding than timothy or similar grass hays. Proving the value of succulent roughages, it was found also that good quality timothy hay plus mangels gave from 15 to 20 per cent more profitable gains than clover hay alone. A hay made from peas and oats, well cured, will produce satisfactory gains, but at least 10 per cent less profitable than alfalfa or clover or a mixture of these with oat sheaves.

Fine corn stover will also make profitable gains, but there is a large percentage of waste. However, a small amount may be fed satisfactorily as a supplement to good quality leguminous or grass hay. Coarse hays commonly found in marsh lands are approximately 50 per cent less valuable in lamb finishing than good quality timothy hay, and approximately 60 to 75 per cent less efficient than clover or alfalfa hay. A limited amount of straw may be fed satisfactorily in finishing lambs, but this should only be as a supplement to rlover hay and roots. Generally speaking, the richer the hay and the better it is cured, the more profits will be made in feeding it to lambs. Coarse, dry roughages of any sort are less palatable, more wasteful and less profitable than are the finer feeds of the same varieties.

Succulent roughages play a very large part in profits from lamb finishing. Generally speaking, good succulent roughages, such as turnips, mangels, sugar beets, corn ensilage, pea and oat ensilage, or the like, make the dry roughages and grains more palatable and more digestible. Again, these succulent roughages are cheaply grown and are rich, nutritious foods in themselves. Where corn ensilage may be raised for $2 per ton it is the cheapest and best succulent roughage for lamb finishing. When fed with clover hay and grain it will produce 5 per cent greater profits than a mixture of turnips, clover hay, and grain. However, a mixture of turnips and ensilage with hay and grain will usually give greatest profits. The turnip is the safest root to feed in finishing lambs, particularly where wethers or even ram lambs may be found in the pens. Mangels, particularly, may have a dangerous influence on the kidneys of wethers and rams.

The grains which may be most profitably fed vary considerably from year to year with the market values of those grains commonly found in Canada. Oats, barley, and feed wheat are all excellent grains for lamb finishing, nd may be fed whole or crushed, but never fine-ground. A mixture of these three will usually give much better results than any one grain singly. Corn is another grain which excels in the fattening of lambs, particularly those requiring only a short finish. Corn-fed lambs on the Central Experimental Farm have reached a profit of $2 per head, making great gains at a reasonable cost. However, at the present market prices corn would not be profitable for this purpose. Elevator screenings also are very valuable in lamb finishing, varying in value, however. In direct proportion to the variation in the quality o fthe screenings. Where there is a high percentage of broken kernels of wheat and barley and oats, screenings may have a good value almost equal to a mixture of barley, oats, and wheat. Elevator screenings containing a high percentage of black-seeds and foreign matter have less feeding value. Screenings with dirt and black seeds screened out give the greatest gains and profits. A mixture of whole screenings with barley and oats has given from 10 to 40 per cent greater profits than the screenings alone, the variation being due to the varying quality of the screenings. Black-seeds alone are most unpalatable and are dangerous to feed, in that a large proportion of the feed will pass through the lambs in an undigested condition and will again germinate on the land. Black-seeds fed alone are unprofitable, and the lambs will make small gains if compelled to depend on this feed for their sustenance.

It is doubtful if, under average conditions any high percentage of mill feeds can be fed profitably in lamb finishing. However, where grains are very expensive the following meals may be profitably used: Bran is an excellent addition to a grain mixture, especially in the absence, or partial absence, of succulent feed: linseed oil cake might often be profitably added to the grain ration to put a final finish on the lambs; gluten meal is even superior to the linseed oil cake; cottonseed, when not exceeding 10 per cent of the ration, may often be a profitable addition to the grain ration; middlings, shorts, and fine-ground grains are of a pasty nature when moist, and should not be fed.

Briefly to summarize the feeds, one might say that the character and quantities of feeds depend largely upon market conditions and feeds available. A ration including some good succulent roughage and properly balanced as to nutritive contents will almost invariably give greatest profits. Generally speaking, it will not pay to

exceed 1¼ pounds of grain per lamb at the finish, nor will it be profitable to feed more than 5 pounds of succulent roughage and 3 to 5 pounds of dry roughage per head per day at any time during the finishing period.

Cost of Equipment

The cost of equipment for the finishing of lambs is very light. Warm quarters are not necessary for sheep of any class. Sheltered sleeping quarters, free from draughts and having a dry floor, are usually all that is required. A good, tight, single-board shed with doors opening to the south or, for the Prairie Provinces, a straw shelter or even the protection of the winter feeding. No other class of bush or the straw stacks, would, under average conditions, be ample for this purpose. Cheap, convenient racks and troughs, or a combination rack and trough, will cost little per carload of lambs fed and, if made portable, may be used for both summer and stock requires so little in cost of equipment, in buildings, utensils, preparation of feeds, or in any other way as do sheep. In these days when labour is extremely scarce, this phase of animal husbandry should appeal strongly to the farmer who has not sufficient labour to go into dairy husbandry, swine, or even beef cattle.

N.B. Agricultural Societies United in Annual Session

The 1917 annual meeting of the New Brunswick Agricultural Societies United was held in the Provincial Government rooms, St. John, on Thursday, November 22nd at 2.30 p.m.

B. M. Shaw, the president of the Association, occupied the chair.

The various officers of the Association were present, excepting Secretary Stanley Wilson, who was unable to attend owing to serious illness in his home. K. M. Fiske, B. S. A., Florenceville, was appointed secretary pro tem.

H. B. Durost, who was appointed manager for the receiving of orders, purchasing and distribution of chemicals, at a special meeting of the Board of Directors several months ago, read the minutes and the financial and auditors statements.

The attendance was not very large and did not by any means represent the number of agricultural societies that purchase fertilizing chemicals through the Association. This is a matter that the rank and file of farmers who profit by the co-operative purchasing of their fertilizer requirements should see to it, that their respective Agricultural Societies are represented at the annual meetings of the Association.

The Association is saving thousands of dollars each year for the fertilizer users of the province, and consequently the burden and heat of the day should not be left on the shoulders of a few men who have taken a keen interest in the organization and upbuilding of this worthy Association.

Societies that have not yet followed the practice of purchasing the fertilizer requirements of their members co-operatively, are missing one of the greatest opportunities to be of a real live benefit to their respective communities.

The home mixing of chemicals for fertilizing purposes is no new fangled idea—the system has been tried, proved and found equal to every claim made for it.

Any Agricultural Society interested in the question of fertilizers may procure all the information they require by writing the Superintendent of Agricultural Societies, Department of Agriculture, Fredericton; J. D. McKenna, Sussex, the Secretary-Treasurer of the Association, or H. B. Durost, Woodstock, N. B.

Orders for large quantities of chemicals have already been placed, and in some instances the goods have already been delivered.

The finances of the Association are in good shape, a balance of $757.16 being reported.

The election of officers resulted as follows:—

President—W. H. Moore, Scotch Lake; Vice-President—C. M. Shaw, Hartland; Secretary-Treasurer—J. D. McKenna, Sussex. The other members of the Board of Directors are Stanley Wilson, Rolling Dam; Boy K. Merritt, Moores' Mills; R. J. Huggard, Norton and Roy McCain, Florenceville.

The By-Laws of the Association were read section by sectino.

It was agreed to hold the annual meetings in future in Fredericton, instead of St. John, and that the Directors be paid their transportation, hotel expenses and an allowance of $3.00 per day while attending meetings of the Association.

Home-Grown vs Commercial Seed of Field Roots

One of the reasons why root seed growing has not been practised to any extent in Canada before, is the rather widely spread idea that Canadian climatic conditions are not as favourable to the production of high class seed as are the conditions in in those European countries upon which Canada has relied in the past for her seed supply. In other words, the European countries have been supposed by virtue of more suitable soil and climatic conditions to be capable of raising seed producing larger root crops of higher quality than Canada ever could be expected to do. A similar conception is also very common in the United States. Such a conception has no foundation an dis entirely wrong.

Experiments, conducted the last few years by the Experimental Farms System all over the Dominion, most conclusively prove that Canadian grown seed in no respect is inferior to imported seed. On the contrary, it produces better crops than does imported seed. In support of tihs statement the results obtained in 1916 with home-grown seed of varieties of mangels and swede turnips in comparison with imported seed of the same varieties may briefly be summarized.

Mammoth Long Red Mangel seed, raised at the Central Experimental Farm, Ottawa, in 1915 produced a root crop in 1916 which averaged, when tested at nine of the Dominion Experimental Stations, over two and four-fifths tons more to the acre than imported seed of the same variety. Mammoth Long Red Mangel seed grown at Charlottetown, P. E. I., was tested at Charlottetown and Ottawa and produced about half a ton of roots more to the acre than imported seed of the same variety, and this in spite of the fact that the Charlottetown seed was harvested under most unfavourable conditions. Seed of the same variety, raised at Kentville, N. S., gave a root crop at that Station which exceeded the crop realized from the imported seed by close to three and a half tons to the acre.

Yellow Intermediate mangel seed, originated at Ottawa, was tested at seven Experimental Stations and produced, on the average, 3 tons 750 pounds more roots to the acre than imported seed; seed of the same variety raised at Charlottetown, P. E. I. tested at six Stations yielded an average of one ton and three quarters to the acre in excess of imported seed.

Daniel Sludstrup Mangel seed, raised at Agassiz, B. C.; Kentville, N. S.; and Charlottetown, P. E. I. respectively was leading on the average, about half a ton to the acre in comparative tests with imported seed of the same variety, conducted on a number of Stations.

Kangaroo Swede Turnip seed, raised at Fredericton, N. B. and tested at five Experimental Stations in Eastern Canada, gave an average yield of two tons nd three quarters in excess of the imported seed, grown in comparison with it.

It is rather obvious, from these figures, that there is no foundation whatsoever for the conception that European-grown seed of field roots is superior to Canadian grown. On the contrary, the figures furnish a strong argument in favour of Canadian-grown seed being used in preference to imported seed. It is true that in some instances the imported seed produced yields only slightly behind those of Canadian seed, but what is of real importance is this: In so single case did the Canadian grown seed fall behind in yielding capacity, the same variety of European seed. This is the more encouraging as in most cases the Canadian seed was raised from roots, a great percentage of which would, under no circumstances, have been accepted by European growers as fit for secd production.

Under the circumstances there seems no reason why Canada should, in the future, rely on foreign countries for her root seed supply. There is an opening, now, for a new agricultural industry and, indeed, it is believed that the development and firm establishment of that industry will bring unthought of advantages to Canadian farming in general.

The Food Service Pledge is in the first instance a call upon the people of Canada to assist in curtailing the consumption of beef, bacon and wheat products for the sake of our own soldiers and our Allies overseas.

The Agricultural Valae of Ground Limestone

The favourable influence of available lime on soil fertility is a well established fact and one that is now widely recognized by farmers. This conclusion is the result of practical experience in many parts of the world and is fully supported by scientific testimony. Many soils are naturally well supplied with lime—present as carbonate of lime—and such soils rationally treated in respect to manuring, cultivation, drainage and rotation of crops, are among the most productive known to agriculture. On the other hand, there are other soils deficient in lime, owing to the poverty in lime of the rocks from which they were originally derived or to depletion through long continued cropping and drainage. It is those soils that profitably respond to liming or application of ground limestone.

Soils in need of liming are usually acid or sour and will turn blue litmus paper red (Methods for testing soils are given in Bulletin No. 80, "Lime in Agriculture," Experimental Farm Series). Soils containing a sufficiency of available lime turn red litmus paper blue and usually give a more or less strong effervescence on the addition of a few drops of any strong acid. Soils of all types may be benefited by liming—heavy clays, silty and slaty soils, mucks and light loams and, especially, poorly draine dsoils.

Though quicklime or slaked lime are forms particularly valuable for heavy clays, chiefly from their beneficial effect on the texture or tilth of these soils, improving their drainage and rendering them mellower and more easily worked, ground or crushed limestone has proven a most suitable and profitable form of lime for application to soils of many types and is to be generally recommended. Excessive applications can do no harm as may be the case with quicklime. Dressings may be from two to five tons per acre, broadcasted on the prepared soil and harrowed in.

Experiments conducted by the Division of Chemistry of the Experimental Farms in Eastern Canada during the past five years have shown that at many points an application of ground limestone has been followed by increased yields, and particularly has been valuable for the clover crop—the establishment of which may be considered as the basis of profitable farming. The following two instances illustrate the benefit that may be derived from ground limestone applied to soils deficient in lime.

In Experiment III at Kentville, N. S. on a sandy loam soil, a plot was treated to 215 pounds of fish scrap, 233 pounds of acid phosphate and 100 pounds of muriate of potash per acre in preparation for an oat crop in the year 1914 and yielded 57.3 bushels of grain. Another plot, similarly fertilized, received ground limestone at the rate of 2000 pounds per acre, and yielded 66.2 bushels of grain per acre—an increase of 8.9 bushels of grain due to the liming. In the second year (1915) of the rotation the fertilized but unlimed plot produced 2 tons, 467½ pounds of clover and timothy hay per acre, while the fertilized and limed plot yielded 3 tons, 760 pounds of hay per acre, an increase of 1 ton, 192½ pounds due to the liming. In the fall of 1915 the strong growth of clover aftermath on the limited plot made it stand out in striking contrast to the others in the series.

At Cap Rouge, P. Q., on a sandy soil, areas in barley, oats, wheat and peas were treated in 1915, to an application of two tons of ground limestone per acre. The following results were obtained, the prduce being expressed in pounds of grain harvested per acre. Barley: average of 3 varieties, limed 3900, unlimed 945. Oats: average of 5 varieties, limed 4200, unlimed 3315. Peas: average of 4 varieties, limed 7080, unlimed 3495.

In New Brunswick sections where there are limestone deposits, the farmers would be well advised to ascertain the calcium carborate content, and if the percentage warrants, they may procure the services of the Government Lime Stone Pulverized and thus be able to procure their supply of ground limestone at a nominal cost.

"Waste not, want not," is an old maxim, never truer than it is today.

"Hanna's at the window binding vouse," chirped the facetious chap when he spotted the food controller's pledge card hanging on the front curtain.

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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DECEMBER 4. 1917.

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WHEAT PRODUCTION IN THE MARITIME PROVINCES

Probably in no other instance has the increased cost of foodstuffs been more generally felt than in the cost of flour, a commodity which must be used to a very large extent in every household. In fact, with the exception of potatoes, it is the principal staple food of the whole community. In years gone by the farmers of this province grew all the wheat which was necessary to supply its inhabitants, and had a surplus for export; but the opening up of the western prairies, with their vast stores of virgin soil wealth, and the other facilities which were available for the growing of wheat, resulted in the prodution of such immense quantities of that grain that eastern farmers found it cheaper to buy their flour than to grow it, with the result that planting was discontinued and wheat became almost a forgotten crop in the Maritime Provinces.

The war has, however, brought about such a change in conditions as to demand a radical change in practice. Canada now has not only to provide the flour to feed her own people, but she has to do the lion's share in providing for the needs of the British and Allied armies at the front. The output of the western wheat fields is insufficient for both these purposes, and, unless some of the people of these provinces are to go short on breadstuffs, our farmers will have to take hold of the situation, and go back to their wheat growing. There is no reason why they should not; it is a paying crop.

That, however, is not the big end of the question, which is, that unless more wheat is grown here there is going to oe a famine in the near future. The first consideration must necessarily oe the constant provision of an ample supply of food for the boys at the front. We at home can put up with other and bulkier foods, which cannot be transported overseas with the readiness that flour can; besides, there are not the facilities at the front for dealing with these bulkier foods. By the time the needs of the army are provided for, there will only remain less than three-fourths of the quantity normally required for consumption in Canada, and the Maritime Provinces, being furthest away from the producing points, stand less chance of getting their requirements supplied than toose nearer. The only remedy is to produce what wheat we want right here at home. We can do it quite readily if we want to.

We feel sure that the urgency of the matter needs only to be brought to the attention of the farmers of these provinces for them to get to work to remedy it. There is no more patriotic body in the whole Dominion than the farmers of the Maritime Provinces, and when the true state of affairs is laid before them, and it is pointed out to them what they can do to relieve the situation, they will surely do it. Every farmer must grow some wheat; if those who have not been growing wheat at all will sow only two or three acres, if the man who has grown two acres will grow five, and the man who has grown five acres will grow ten, the combined result will be astonishing, and there will be no fear of any shortage. If every one makes up his mind to "do his bit" towards an increased wheat crop, there will be plenty for all.

It may be urged that wheat is a plant that requires a very careful preparation of the soil, and many farmers have not got their cultivation sufficiently forward this fall for it. There is no farmer in the province who did not grow potatoes and roots this year, and there is no finer seed bed for wheat than land which has just produced these crops. A thorough discing and harrowing as soon as the land can be worked in the spring, with some slag or other phosphatic fertilizer broadcasted, will provide as suitable a seed bed as can be asked for. The Agricultural Departments are arranging for a supply of seed grain, both wheat and oats, so there should be no difficulty on that score. All that is needed is a desire on the part of the farmers to relieve the situation; the rest is easy.

It must be admitted that it is not particularly to the credit of a great agricultural community like the Maritime Provinces that their people should be dependent upon outside sources for the supply of such a necessary of life as flour. If it was something we could do without there would be a very substantial reason for our farmers refusing to grow it; but as long as we have to have bread we ought at least to be self-supporting in the matter of providing the wheat out of which to make it. Scores of farmers in Eastern Canade "bread" themselves, and many more could do likewise.

REGULATIONS WILL PRESS HEAVILY ON OLEOMARGARINE

Further regulations regarding oleomargarine are worthy of nothing short of praise. By making the change, the Government gives ground for the hope that the laws regulating this imitation butter may yet prove adequate to protect the dairy industry from undue hardship.

It has been announced that licenses will be issued to be effective on December 10.

One complaint of dairymen has been that while white oleomargarine is sold, it is accompanied by a capsule of coloring matter, and then the colored stuff is palmed off in boarding honses and sheap hotels as genuine—if rather unpalatable—butter. But a change in the regulations reads that "no substance intended for the coloring of oleomargarine shall be imported into Canada in packages containing oleomargarine, and no manufacturer, wholesale dealer or retailer dealing in oleomargarine shall deal in, sell or give away any substance intended for coloring oleomargarine."

It appears as though the substitute were to be almost "regulated" out of existence before it starts—and this is as it should be. Oleoamrgarine may be sold only in original packages. Small packages must be wrapped separately, and on each label or wrapper "oleomargarine" must be printed or marked as the most conspicuous ford. The name and address of the manufacturer, together with the official inspection mark of the country of origin, must appear on all labels, wrappers and packages.

And a minimum fine has been set, as well as the maximum of $500. The penalty for violation of any of the regulations is a fine of not less than $50, nor more than $500, or imprisonment for a term not exceeding six months, or both fine and imprisonment.

Details of enforcement of the regulations appear to have been shifted from the Food Controller to the Health of Animals Branch of the Department of Agriculture—which will also go far to create confidence.

If the reguations are lived up to, we will be disposed to congratulate whoever is responsible for making the best of a bad job—a very bad job.

SIGNING THE FOOD PLEDGE

Ninety per cent of the food consumed in Canada passes through the hands of our women. There is, then a great responsibility resting upon them to conserve supplies needed overseas and to utilize perishable foods. Waste in all its many forms should be regarded not only as a sin, but as actual disloyalty in war time. It is important that sufficient and nourishing food should be provided, suited to the needs of the idfferent members of the family.

Arbitrary rules in this case are of little value, but the principle is of general application—that the women in the homes can do no more important patriotic service than by guarding against waste. The question of substitution is very largely in their hands. A little saving in every home, when multiplied by all the homes in the Dominion, would mean a very large amount of food product saved for the soldiers.

You may feel that you do not need to sign the Food pledge—that you will save all you can without it. But how about your neighbor? The actual pledge may help her to remember the duty of food service. The housewives of Canada, pledged to food service, an dliving up to their pledges, will be a powerful factor in the struggle against Germany and against starvation.

FEED THE SOIL

As we all know, it is from the soil that the tree gets most of its strength and nourishment. It is the soil that supplies the three principal elements of plant food, namely, nitrogen, phosphoric acid and potash. There are three parts to the tree—root, stem and leaves. The root takes food and drink from the soil, the stem or trunk carries what the roots have absorbed from the soil up to the leaves, which act for the trees much as the stomach and lungs do for the animal; that is, the leaves digest the food and take carbon from the air. This should make it clear why the orchardist should cultivate and fertilize the soil for his trees.

FARM WORKSHOP CAN UTILIZE MANY WINTER SPARE HOURS

The farmer who has a workshop even though it be only an old building, perhaps 9 by 10, or less, in size, in which he has placed the old heater, no longer useful in the home, and wherein is an improvised bench and vise, a forge and anvil and some small tools has an advantage, the worth of which can not easily be estimated. The equipment for the shop consists of tools the farmer needs. They are hammers, saws, files, planes, chisels, bits, drills, pliers, pinchers, wrenches, bolts, nails, staples, straps, etc.

The tools may be placed in a rack against the wall over the bench. In boxes under the bench may be found old bolts nd nuts, rods, broken parts of machinery, old iron of various sorts and description, pieces of broken chains, straps and many things so often seen hanging on fences or in trees o farms—a real junk pile. But many of these things come in good play, if one cares to take care of them. While the wintry blasts are howling 'round and the blizzard is wrecking vengeance, the farmer can fire up the old heater, set the forge aglowing, and after the "clinkity, clinkity" of the anvil has told of his whereabouts for a few hours, he may surprise himself with the articles he has made. He can become blacksmith, wagon-maker, harness-maker, carpenter for the time and save some money. He can make open links, rings, clevises and hooks. He has not had time to take the old wagon, which he uses about the farm, to the shop in town, but now he can try his skill on sand board, hound or bolster.

He broke a singletree last fall. He needs a plough doubletree and a jockey stick. Let him try his hand. One of his check lines is partly broken, the stitches are broken, leaving only the rivets holding. It has worried him not a little while driving his spirited, prancing young team. He can become harness maker for a time. Then again, his harness is rusty and dusty; a coat of grease won't hurt them. Now while he cannot use them is a good time to make some neighbors think he has a new set of harness.

When he put his implements in the shed there were some nuts missing. Hunt out of the box of old bolts and nuts some that will fit and replace the lost ones. Now is a good time and the shop is a good place to make ready these things.

Again be his work shop ever so small he can find room for many of his small tools, such as loose singletrees, chains, hoes, spud, sheep shears, clippers, corn knives, etc. It is so much better should he have to leave his team standing in the field and hurry for a hammer, wrench, bolt or nut, to go direct to the shop, pick up what he wants and hurry back to his work than to go to the barn, then to the corn crib, and then remember than he left the wrench on a corner of the fence over on the far side of the south field and have to go over there searching for it. A place for everything and everything in its place is a splendid rule.

Much time may be saved by having a shop and keeping it in order, time saved by not having to hunt for things, time saved by not having to drive two or three miles to town, money saved by having a shop. Every farmer may not be a mechanic but he can make almost anything the farmer needs, in a rough way at least, that will be as strong and durable as though made by a professional.

It is a pleasure to have a shop. It is a pleasure to be able to send the little boy to the shop for a clevis, to be able to tell him just where it is, or for a bolt and be able to tell him just where to find it. In short, it is a pleasure to have a place in the shop for everything and know that everything is in its place. It is a pleasure to be able to make and mend necessary pieces of machinery or tools on the farm.

For mending shoes, there is needed a good cobbler's outfit of such tools as the stand and lasts, shoe knife, shoe hammer, pinchers, thread, needles and clinch nails. To mend harness there is needed a sewing clamp, leather, rivets, etc. As time passes and one becomes quite expert in mending things and making many farm necessities, he can add new tools as he finds use for them.

For shop work one finds use for many little things he can get at the hardware store. There should be many bolts, different in lengths and sizes, an assortment of screws, all sized nails, braces, rivets and tacks, assorted lengths of clinch nails, shoewax, thread, andpaper and so forth and so on.

It will pay any farmer, no difference how rich and well fixed, if he has boys, to look into this proposition of putting up a farm work shop. Then, too, he can while away many hurs himself very pleasantly when he finds time dragging.

ANTHRACNOSE, A DESTRUCTIVE DISEASE OF BEANS AND PEAS

Maritime Province farmers put forth a special effort in 1917 to increase bean production. Their efforts were generally satisfactory. Farmers and others who only grew small quantities in previous years, have, during the past season, grown sufficient for the needs of their immediate families, and some will have a handsome surplus fgor sale.

Anthracnose, or pod spot, was the most destructive disease they had to contend and consequently they will be interested in the following advice from the Experimental Farmer of Canada.

Among the diseases of the garden bean and pea, anthracnose or pod spot is the most destructive.

The disease disfigures the pods by dark brown spots, but also occurs on the leaves and stems of these plants, where, however, the symptoms of disease are less conspicuous.

The disease is caused by the fungus **Colletotrichum** in the bean and by **Ascochyta** and **Septoria** in the pea.

Once the disease becomes noticed in the crop, there is no practical methof of preventing its spread.

These anthracnose diseases are conveyed to a crop by the use of infected seed. Infected bean and pea seeds are found among practically all seed merchants' stock. On the seeds, the seeds, the disease manifests itself by more or less prominent, brownish discolorations, very noticeable on the white-seeded varieties. When very prominent the affected seeds may easily be separated from sound ones by hand picking; this will reduce the disease to some extent, but will not control it completely, since it is very difficult to detect those infected seeds which show very little discoloration, and some seeds which are sufficiently infected to propagate the disease, will always find their way into the soil.

It is best to grow one's own seed supply. When the crop is entirely free from the disease it is an easy matter to gather disease free seed, but when the disease is present, care must be taken to collect for seed only such pods as are perfectly ound. These pods should be picked off and stored in cotton (flour) bags away from any infected material. The disease, notwithstanding these precautions, may become prevalent again in the succeeding crop and it is, therefore, necessary to watch the crop from the day the first seedlings appear above ground. The diseased plants generally show seed leaves either brownish-streaked, or of a very distinct pale yellow colour; when the latter is the case, the disease generally is present on the stem. When these signs are noticed prompt action is necessary. Each diseased or sickly-looking plant hould be pulled up, root and all, and be deposited in a paper bag, not thrown on the ground among the other plants. The hand which has pulled up the diseased plant should then be dipped into a pail containing a 2% solution of formalin to cleanse it from adhering spores. This will prevent the infection from spreading to any sound plant touched after pulling up a diseased one. When all plants have been collected in the paper bag, burn it, contents and all.

In this manner, a small plot may be kept quite free from disease and will produce a fine stock of sound seed. It is preferable to have such seed plot some good distance away from one's ordinary bean or pea plot.

SAVE THE LEAVES—DON'T BURN THEM

The annual job of raking up and burning the leaves on the lawn is being performed at the present time, and thereby much vegetable matter that might be of value later is being destroyed. While the amount of plant food materials contained in leaves is small, yet the vegetable matter of which they are composed is valuable when incorporated with soil in that it improves the physical condition and increases the water holding capacity of such soils.

If the leaves can be piled in a pen in the back yard, mixed with other rubbish and kept moist, in the course of a few months, they mill have rotted sufficiently to be mixed in the soils in the vegetable garden, and flower beds or to be used in mixing soils for potted plants, etc. During the process of rotting they should be turned occasionally as this causes them to rot somewhat faster. Such material is valuable for mixing (not in too large proportions) with heavy clay soils in order to make them lighter and more easily worked.

MORE BACON PRODUCTION NEEDED

We appeal to Maritime formers, as a patriotic duty, to raise as many pigs as possible during the next twelve months. The food situation in France and Great Britain is exceedingly urgent, and there is on espcial call for bacon supplies.

Figures carefully prepared some months ago showed that the European swine population had decreased since the war began by over 32 million head, or 13 times as many pigs as there are in all of Canada. This is in addition to an equally striking decrease in cattle and sheep. And the figures are mounting every week. A few days ago bacon was selling in London, England, for 60 cents per pound.

While no formal pledge as to future prices of live hogs has been made by the Dominion Government, there is a practical certainty of high figures for a long time to come. In the United States the Food Controller has pledged the Government's moral support of a price at Chicago not lower than about $15.50. It is, indeed, almost certain that this figure will on the average be exceeded. These figures will permit of profitable hog feeding even at considerably higher prices for feeds than prevail at present. But even though grains and feeds should go yet higher than they are now, and even though the feeding of grain to hogs should, in itself, entail no profit but rather an actual monetary loss, any farmer growing his own feed could still very well afford to accept the profits that his hogs would yield him.

But, quite aside from profits, I wish to make my appeal on Patriotic grounds. The shortage of bacon supplies in France is now, and will be, very severe. The question of food is a question of life or death.

The Manitoba Government is setting the example by breeding a largely increased number of sows on each of the farms in connection with the various provincial institutions. It would seem to us, too, to be a safe and patriotic act for every Maritime farmer to follow the example.

Every Maritime farmer will know just at what time of year he wishes his litter to arrive. It may be pointed out that sows bred during the first week in January would farrow shortly after the middle of April, the period of pregnancy being about 112 days. Let every farmer breed his sows to suit his own requirements.

The main points are as follows:—

1. The meat shortage of the Allies is acute.
2. No other class of animal so lends itself to a rapid increase as the hog.
3. The price of pork is certain to be very high.
4. By immediate decision and action enough sows can be bred to double, treble, or even quadruple the Maritime Provinces pork production in 1918.
5. By sowing the proper kinds of forage next spring, summer feeding need not be all on dry grains.

USE OF STRAW FOR MANURE

Both wheat straw and bean straw are capable of supplying considerable manurial value. If either are used for manure without first feeding them, or without first rotting them, it is necessary to apply them to the land with care in order not to get too heavy a dressing. Too large a dressing of dry, unrotted straw, whether of wheat or beans, will likely cause firing in the following crop.

Bean straw, coming fro ma leguminous crop, is more valuable pound for pound than wheat straw. Either of these straws used for manure should be applied to the land rather thinly and then pulverized as much as is possible by farm methods, which can best be done by double disking. The disking will chop either straw into small pieces an mix it fairly well with the ooil. This method will get the greatest manurial value of the straw.

U. S. POTATO GRADES

Two standard grades for potatoes have just been recommended by the United States Food Administration and the United States Department of Agriculture. Results of field tests in grading and packing and of experiments in marketing graded and ungraded potatoes, show that marketing potatoes by graes is desirable, practical and economical.

Further, it has been ruled by the Federal Reserve Board that "potatoes, properly graded and packed and stored in a weatherproof and responsible warehouse, as evidenced by its receipt, would undoubtedly constitute a readily marketable, nonperishable staple."

The present prospect of a very large crop of potatoes, the food supply situation, the overtaxed transportation facilities, and the ruling that federal reserve banks may make loans against potatoes properly stored in approved warehouses, emphasize, says the Department, the importance of adopting uniform grades.

Grades Recommended

The No. 1 grade shall consist of sound potatoes of similar varietal characteristics, which are practically free from dirt or other foreign matter, cuts, scab, blight, dry rot, and damage caused by disease, insects, or mechanical means. The minimum diameter of potatoes of the round varieties shall be one and seven-eighths inches, an dof potatoes of the long varieties, one and three-fourths inches.

The No. 2 grade shall consist of potatoes of similar varietal characteristics, which are practically free from frost injury and decay, and which are free from serious damage caused by dirt or other foreign matter, sunburn, second growth, cuts, scab, blight, dry rot, or other disease, insects, or mechanical means. The minimum diameter shall be one and one-half inches.

CLIMATE OF THE SOIL

Land drainage is too often looked upon merely as a means of getting rid of a lot of stanidng water. Everybody knows that as soon as we begin to cut ditches through the swamps and lay tile the swamps disappear, the bullrushes die, the frogs move to other quarters, and we begin plowing the land.

The first object of land drainage is to drain, but this is only a part of what drainage does. To get the whole story we have to compare an acre of tile-drained land with an acre of undrained land throughout a whole season. Consider first the undrained acre in the early spring. The air is already warm enough to promote good growing, but the soil is still filled with frost or very cold moisture. As the top layer dries out the farmer hastens to work it and sow it, so as to get as long a season as possihle. In due time the crops sprout up and send down roots, but the roots cannot go far without being stopped by the cold, water-filled earth beneath. So the roots continue to feed the growing plant from the thin layer of warm soil on top. This is all very well in early summer, but a sthe summer grows hot and dry these shallow roots are no longer equal to the occasion. They have sucked all the moisture and all the nourishment out of the thin top layer. Meanwhile the water level in the soil has dropped lower and lower. Below these shallow roots is a fine rich layer of soil not too moist, but it is too late for them to reach it. Under the August sun the plant stops growing and either shrivels up or ripens at about one-third its maximum size.

Why Drained Land Warms Up Early

Next consider the acre properly underlaid with lines of pipe about four feet deep and a hundred feet apart. No water has lain on this land, nor in the spaces between the grains of the soil. It has been drained empty. The chill of winter has entered it deeply, frozen it and heaved it, and broken it till the soil is no longer caked hard, but is "light" and friable. When the spring comes the warm rains flow easily down through it, and as the water runs out below through the tile drains the war mair of spring follows it. This is the reason why the drained land is always warmer than undrained land in the planting season and why a farmer can sow it earlier. His crops sprout earlier ad send down roo's. The roots grow deep. There is moisture to attract them, but not standing water to drown them. No matter how deep hey go, here is always air for them to breathe. Accordingly, roots are always much deeper and more vigorous on land drained with the little clay tile. Finally comes August with its heat and drought, but here it finds vigorous plants with deep roots. The soil near the surface is dry as a bone, but far below is a great supply of moisture for the roots. So, despite the heat, the crops continue to grow and ripen until the chill of autumn put an end to the season.

Even a hasty comparison like this of land with and land without drain tile shows thta land drainage does not one thing for the land, but at least twelve:

1. Drains staning water from surface.
2. Lowers the water level under ground.
3. Breaks up the soil by air and frost in winter.
4. Allows warm air and water to enter it in spring.
5. Allows seed to be planted earlier.
6. Prevents frost heaving after crops are planted.
7. Allows roots to grow deeper in summer.
8. Gives roots more soil to feed on.
9. Keeps more water stored between soil particles during drought.
10. Produces larger and better crops.
11. Destroys malaria and the mosquito.
12. Improves the health of animals and people on the farm.

But the land drainage, like everything else, must be well done to accomplish its results. One cannot go to he first cross roads and bu the first soft porus article offered and expect permanent results. Many chemicals exist in bogs and drainage waters that can and have destroyed drain tile. Drain tile should be made of the best and hardest kind of clay. It should be like a stone jug, not like a flower pot. Such tile cannot be destroyed by drainage waters charged with carbonic acid. It should be tested for strength to see that it will carry its load of earth.

WINTERING BEES OUTSIDE GIVES BEST RESULTS

Experiments in wintering bees outside, placing four colonies together in a case, were started at the Central Experimental Farm, Ottawa, in the winter of 1912-13, and have been continued every year since. Compared with bees wintered in the cellar, the outdoor-wintered bees have on the average, come out in spring in better condition, judged by the proportion of colonies found to be living in the spring and the number of combs in each hive found to be covered by bees at the first examination, made towards the end of April.

The wintering cases employed were large enough to take four 10-frame Langstroth hives with a space for three inches of planer shavings at the sides between the hives and the walls of the case, and also three inches underneath the hives, and ten or twelve inches on top. The top packing was placed in bran sacks for easy removal.

The outside entrances to the hives, cut in the case as far apart as practicable, measured about 8 inches long by 1⅛ inches high. A piece of wood revolving on a screw reduced each entrance to ⅜ of an inch wide by 1½ inches high during the cold weather.

Sheltering the apiary during winter rom wind was ound to be very important. At Ottawa the wintering apiary is thus proected by a close board fence 6 feet high—8 feet high would be better for an apiary of fifty or one hundred colonies—and Norway spruce trees have been planted close to the fence to take its place in years to come.

An important advantage of outside wintering over cellar wintering was found in the protection afforded by the wintering case and packing during th spring. The colonies thus protected always built pu much faster in the spring than those that were brought out of the cellar and given little or no protection. The hives were left in the wintering cases until June, the casese being deep enough to take one super.

There was a somewhat greater consumption of stores during the winter in the colonies left outside than in those wintered in the cellar, and breeding commenced earlier in the outside wintered colonies. Young bees were usually emerging at the date (average, April 11th,) that the cellared wintered colonies were brought out these latter colonies having eggs only at that time.

The bees got their firs good cleansing flight about the middle of March, three or four weeks earlier than the date the cellar wintered bees were brought out. From the date of this flight onwards they did exceedingly well.

The arangement o ffour colonies together in each case is a particularly good one, because they keep one another warm. They are placed back to back with the entrances on the two opposite sides.

Don't be afraid of the food service pledge. It means Conservation—not Starvation.

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BEE ENEMIES

King birds and bee martins and a few other insectivorous birds prey upon bees for the honey that is in their tiny sacks, mainly but are not of much damage unless in yards where queen rearing is carried on. In that case, they prove an expensive luxury, for they will catch the young queens when they go out to mate, in such numbers as to prevent its profitable continuance. They probably take the largest bees that they see, and kill many drones. Their crops have been found full of parts of them partly digested. A shotgun is the proper remedy in the hands of a skilled marksman.

Mice

Mice do not eat bees, but will destroy combs with honey in them and sometimes winter in a hive and keep the bees in such a turmoil that they die in consequence. A good cat, a trap or a storage place for surplus combs, where they can be excluded, is the best remedy.

In wintering out-of-doors or in, they may be excluded from a hive by tacking on wire netting with meshes coarse enough to allow the bees to go through it, but small enough to exclude mice. This will do, but I do not like to confine bees with wire netting in this way if it can be avoided, as they are inclined to fret themselves to death or reduce their numbers greatly, and often it becomes closed with dead bees and the colony suffocates.

Skunks

Skunks often call the bees out on the alighting boards after dark by scratching on it, and then gobble up every bees that comes out. They seem to know how to get hold of a bee without being stung, and swallow the sweet morsel in its honey sack. You may discover it by the scratches in the earth in front of the hives, and a trap is the remedy.

Ants

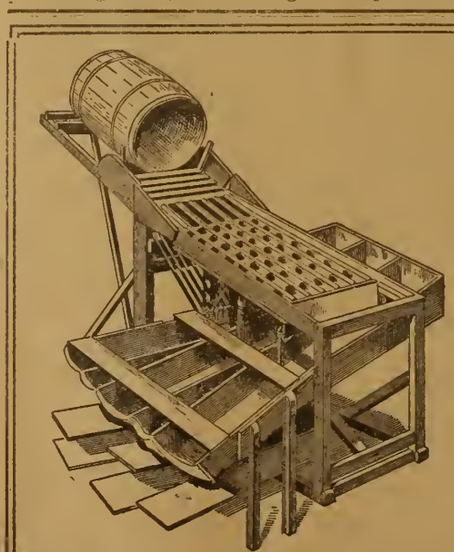
Ants seem to seek the bee hives for the warmth over the cluster, more than for any other purpose. A strong colony will usually drive them out, but a weak one may swarm out, discouraged by their irritation. Destroy their nests by sprnikling with gasoline or kerosene in early spring, before they get powerful enough to do much damake. Holes may be made in their nests with a crowbar, and a tablespoon of bisulphide of carbon turned in. Stop the hole with a plug of earth. In a day or so they will be found dead, but be very careful of the solution, as it is very inflammable, and its fumes should not be allowed in a room where there is a lamp or fire. Ants are much more troublesome in the south, where they have larger varieties, and whole apiaries are often almost ruined by them.

Spiders

Spiders seem to have a rare appreciation of a heavily laden bee. It is said that spiders may be a valuable help to the apiarist in fightinig the wax moth worm in stored combs, and that there never need be fear of damage from them if spiders have free access to them, for they will destroy them.

Wasps and Hornets

These sometimes capture and carry off bees, but unless they are seen to do this in large numbers, we would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not regard them as serious enemies.

Mosquito Hawks

Called devil's darning needles, are very destructive of bees in the southern states, but do no serious damage here.

The Wax Moth

Is probably the cause of more real damage than all the other enemies combined, and they do no damage to a strong, healthy colony. It is only when they become weakened by disease or some other cause, that they are enabled to get a foothold in a colony. If they do, they very speedily destroy it by tunneling their webs through and through the combs until they become a filthy mass. In the old box hive days and the early days of the movable frame, they were destructive, and moth traps and moth-proof hive patents were numerous, many were driven out of business by their depredations.

In these days, the modern beekeeper regards the bee moth more of a joke than a pest. In fact, it is considered almost a disgrace to allow them to get a start among colonies or combs. I do not remember of ever having any serious trouble with them. Italian blood in an apiary is a sure preventive in the colony, and sheets of tarred paper placed between hives of combs stored will prevent their entrance. Winter's cold in combs stops their ravages, also.

There are two species of wax moth, the larger one (Galleria mellonella) and the lesser wax moth (Achroia grisella). The former is much more general, and, because of that, more destructive. In the south, where cold weather does not check them, they are both much more destructive than here in the cold north. Combs like the Hoffmann self-spacing, if stored, are less subject to damage than the unspaced kind, on account of being placed further apart. Combs, if taken from a colony of Italian bees and kept in a tight compartment, are usually free from pests. However, stocks of hives containing moth-infested combs can be fumigated with sulphur or carbon bisulphide and freed from them entirely.

The Worst Enemy

By all odds is the careless and ignorant beekeeper, who leaves hives and combs where bees have died or hav become infested with diseases lying about, open to the bees of his neighbor to infect his bees and perhaps those of the whole vicinity or countryside. This, in fact, is the way disease and insect enemies are allowed to propagate. To prevent this state of affairs there should be in each state bee inspection laws and competent inspectors to see that such things are not allowed, as the spread of infectious diseases or the propagation of insect enemies. Not until this happens can we be protected in our rights as beekeepers and honey producers to gather the sweets of Maine.

THINGS TO REMEMBER IN STORING SPUDS

Each year there is a considerable waste of the potato crop due to unsatisfactory storage conditions. The losses in storage are in a large measure the result of fungus diseases such, for instance, as dry rot and bacterial rots. In fact, the severe losses from dry rot alone have done much to discourage potato storage in a few potato districts of the west.

It will pay every man who contemplates storing potatoes this winter to apply a few practical considerations to the storage problem. Losses can be greatly minimized by observing precautions such as the following:

1. Nothing but sound tubers should be stored. Discard all that show even the beginning of any form of rotting.

2. Avoid storing bruised or frosted potatoes, as they will soon start rotting and endanger the crop in storage.

3. Diseases can be kept down by maintaining a temperature of about 35 degrees Fahrenheit, which is also best for potato storage.

4. Through ventilation of the pit or cellar. No potatoes should be more than three feet from fresh air.

5. Avoid placing wet potatoes in storage as they stimulate disease development.

TURN WINDFALLS INTO A PROFIT

Windfalls and waste apples can be used profitably by feeding to pigs or dairy cattle. The apples may be harvested in the orchard by swine, or may be gathered and stored in a cool, dry place for fall an early winter use.

Apples, like silage or roots, are fine conditioners and keep the appetite good, thus enabling the animals to handle heavier rations. More value lies in this perhaps, than in the feed value of the apples, although when fed in connection with a protein-rich feed, good returns can be realized. Apples are low in protein content, hence other feed that has a high protein content should be fed in connection.

In different experiments, apples have been found to be equal to 40 per cent of corn silage for feeding dairy cows, and that apple pommance is practically equal to it.

Pigs, when fed apples with shorts and skim milk, used from nine to fifteen pounds less of concentrates for every one hundred pounds of apples fed. At present prices for grain, this gives a value for apples of from twenty to forty-five cents per hundred, which is so much saved.

Get a pig and turn it into the orchard.—R. H. Tucker, State Agricultural College, Fort Collins, Colorado.

Many people misunderstand the food problem. They think they are asked to do with less food. This is not so. They are asked to substitute other foods for wheat and meat.

Memories

of "the nicest cup of tea I ever tasted"—

KING COLE ORANGE PEKOE

The "Extra" in Choice Tea

DAIRYING.

FEEDING FOR MILK AND ECONOMY IN USE OF SPECIAL FOODS ON SCOTTISH FARMS

An interesting article by Jas. Henry on feeding for milk and economy in use of special foods on Scottish farms, appeared in a recent issue of the Ottawa Valley Journal. We believe the ideas set forth will be of interest to our farmers in the Maritime Provinces and consequently we are taking the liberty of re producing it in the Maritime Farmer.

Economy in the use of foodstuffs always exercises the watchful care of the Scottish farmer. Though liberal feeding to animals of large capacity is undertaken, the Scottish farmer has found out that there is a limit beyond which it may become unprofitable. The point which concerns the feeder is not the amount consumed, but rather the use that is made of it. While experiments to determine the influence of quantity upon digestibility have not been entirely decisive, they clearly indicate that with dairy cows, when the amount of food is fairly within the normal capacity of the animals, it is as well digested as smaller amounts. The experienced feeder in Scotland pins his faith on palatability of food for his cows, and knows that foods which are relished are likely to be consumed in abundance. Palatability is therefore an important factor in feeding; he finds that it stimulates digestion, and therefore economy of returns.

Palatableness usually accompanies a good mechanical condition of the roots, straw, etc., grown on the farm, and on the winter storage of these largely depend the success. This item of the feeding problem always exercises the care of the farmer and is one of the chief reasons of his success with live stock. It is for this very reason that on every farm there is a fixed threshing outfit, driven either by water power, steam or gasoline. An hour or so daily is spent in the winter months in threshing the oat or barley crop, and the fresh straw is relished and readily eaten by cattle that get as many roots as the average cattle stock in Scotland consume. All threshing machines are fitted with a winnowing arrangement that cleanses the straw from all dust and weed seeds. There is very little hay eaten by cattle in Scotland, and straw that has been properly harvested has a high feeding value.

Preparation of Food

Various means of preparing foods have been largely experimented on, and experience tells that cooked foods are no more digestible than the same food uncooked. In fact, some are rendered less digestible through heating. While there are slight individual differences in digestive efficiency among cows, extensive experiments have shown that these are insufficient to account for the widely variable returns made by similar cows from the quantities of the same kind of food.

"Handsome is that handsome does" is especially true of the dairy cow, and the naive Scotsman in his cow testing, safeguards himself at all times by keeping at least an approximate record of foods consumed as well as the product yielded by each individual. Testing for the most part is carried out for the purpose of eliminating the boarder, the high yielder does not figure on his cares, but the well fed low yielder gets short shift when found out. The high average yield in dairy herds and the high average price obtained at Scottish sales is ue to the manner in which the Scottish farmer does his weeding in the cow barn.

Influence of Food on Milk

On the influence of food on milk yield extensive experiments were carried out on a large number of farms, continuously for several years. The work was undertaken and supervised by the Agricultural College, and the results are reliable and are valuable as a guide to the economical uses of expensive concentrated foods for milk production. Fro mthe results obtained the following general conclusions may be drawn:

Although a heavy ration of concentrated food will produce more milk at first than a moderate ration, there is a limit beyond which the ration cannot be increased with profit. An allowance of as much as 12 lbs. per 1,000 lbs. of live weight per day of concentrated food, such as cotton seed meal, gluten grains, etc., was found to be excessive, both from a point of health and also having regard to profit.

When cows begin to fall off in their yield as the lactation period advances, an increase in the concentrated food does not check this falling-off except temporarily; and, conversely, a decrease in the concentrated food under similar conditions does not cause a more rapid falling-off in the yield. The character of the cows has much more to do with determining the quantity and quality of the milk than the actual amount of concentrated food in the daily ration so long as the cows receive enough to keep them in a thriving condition, and it is a mistake to suppose that once this limit is reached an increase in the concentrated food results in a corresponding permanent increase and improvement in the milk. It may indeed have the opposite effect. Finally, as the results obtained in these experiments indicate that a heavier ration of concentrated food may be employed with profit early in the lactation period than can be done as the period advance it seems probable that the most economical method of feeding dairy cows, having regard only to the milk produced, would be to make the ration largely dependent upon the amount of milk the cows yield. In other words, the full ration should be given when the cows are in full milk, and as they fall off in yield the allowance should be gradually curtailed until, at the end of the lactation period, it reaches the minimum necessary to keep the cows in good condition.

Cows on Pasture

The advantage of giving dairy cows which are out on grass during the summer months a supplementary ration of from 4 lbs. to 8 lbs. of concentrated food, is exceedingly small as regards the yield of milk, provided the pasture is of average quality. It is doubtful, having regard to profit, whether any concentrated food should be used at all on grass during the summer if the pasture is of average quality, the season normal, and the cows in a healthy and thriving condition. To increase the concentrated food as the season advances is not to be recommended, as it does not, except temporarily, cause an increase in the milk, or even check the fall in the yield which always takes place as the lactation period advances. As regards the suality of the milk there does not appear to be any advantage whatever on the average in using on grass concentrated food of the kind employed in these experiments. Concentrated foods supplied to cows on grass does not necessarily cause an increase in the live weight of the cows, even when it produces no effect on the milk yield. When cows are fed on fairly good grass in the summer they do not require much additional artificial food, and when such is supplied it is at a loss as far as the milk yield is concerned. Confirmation is also given to the conclusion previously arrived at that no addition to the food could prevent, except temporarily, the falling off in the milk yield as the lactation period advances.

Experiments in Milking

Along with the feeding experiments there were others conducted at the same time with a view of obtaining information upon the following points:

1. The effect of milking at equal and unequal period on the quantity and quality of the milk.
2. The results of milking cows three times a day as compared with milking them twice.

The results of the experiments may be summarized as follows:

1. It cannot be said that the total quantity of milk is inbuenced by the equal or unequal periods of milking, but the quality of the milk is seriously affected, cows which are milked at equal intervals producing more butter fat than when milked at irregular intervals.
2. No increase of the milk yield was obtained by milking three times a day in preference to twice. On the contrary, the extra driving and interference with the cow seemed to produce results of a negative character. The quality of the morning milk was also adversely affected by the additional milking.

Feeding Experiment with Palm Kernel Cake

On account of the great rise in the price of artificial feeding stuffs it was considered desirable that experiments should be undertaken with a view to demonstrating the feeing value of some materials that, on account of the war, were available in considerable quantities, but which had not been hitherto largely used, and with which farmers were generally unacquainted. The experiment was devised for the purpose of determining the feeding value of one of these materials—palm kernel cake—and the agricultural colleges conducted the trials. Palm kernel cake is the residue from

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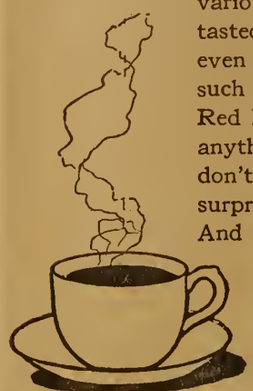

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the kernels of nuts of the West African oil palm after compression of the oil, which is a valuable commercial product used in the manufacture of margarine. This trade used to be entirely in the hands of the Germans, but since the war two mills have been erected in Britain with a combined capacity of 70,000 tons per annum.

The cows receiving the palm nut cake did not increase in quantity of milk in any undue proportion compared with those receiving cotton cake or linseed cake, but their general condition improved. There is evidence to show, however, that palm kernel cake gives a higher percentage of butter fatin milk. Until the acute transport conditions arose, palm kernel cake was very much cheaper than cotton or linseed cake, and gave a better monetary return as a feed. It will likely come into its own when normal times come again.

On Scottish farms there is not the same amount of concentrated feeds bought, as there is with the Canadian farmer. In Scotland the quality of stock gives the farmer a good market for his field produce. The beef producer has the quality of animal that fattens on the daily fresh ration from root cellar or straw shed, with a little cake added at finishing months. The dairy cows with their high average of milk yield give good returns for the home farm feed, and profits are not derived from excessive and indiscriminating feeding. Breeding and feeding go hand-in-hand, and the Scottish farmer is clear on this point, that careful and successful breeding is the best economizer of foodstuffs.

CARE OF CREAM CANS

I am not thinking of holes in the vessels when I say that there is a big needless leak in cream cans. The cream can is one of the worst slammed about, rammed about and jammed about pieces of furniture known to our twentieth century civilization. And part of the bad usage is quite unnecessary.

The war is creating a special reason why cream cans should be treated with greater respect. There is a present shortage of tin plate, from which cream cans are made, and in the United States, as well as in Canada, efforts are being made to impress can handlers with the importance of caring for these vessels. One United States publication just to hand says, "It may soon be impossible to secure more milk, cream or ice cream cans until after the war." If a real famine in milk and crea means were to occur, the loss to the farmers would be much greater than usual because of the higher prices which are now obtainable for milk and cream.

Here are Some "Cans".

You can avoid using milk or cream cans for wrong purposes. Sometimes people put gasoline in them and ruin them almost immediately.

You can refrain from battering the cans needlessly.

You can return other people's cans, if you happen to get them by mistake. The owner needs them.

You can see that your can does not lie about the railway station. Even though you may not be going to use it at once, take it away and care for it.

You can remind the railway agent that he may help by giving cans as much protection as possibel.

You can rinse the vessel before using. It may have been thoroughly cleaned at the factory; but it needs a fresh rinse before using.

You can keep the vessel clean inside. Use a little sal soda occasionally in washing the tins out, if necessary.

You can see that a tin does not stand in a damp place or with moisture inside. Especially at the end of the season, when the cans are being put away, dry each carefully and store under cover in a dry atmosphere.—By L. A. Gibson, Dairy Commissioner for Manitoba.

"MACHINES MUST TAKE THE PLACE OF MEN"

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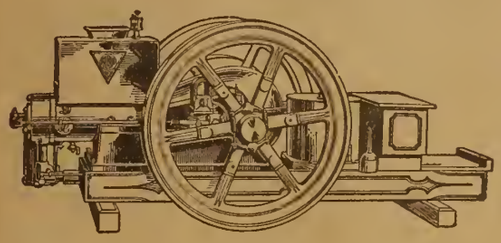

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LIVE STOCK.

MANAGEMENT OF THE BULL

We read and hear much concerning the feeding and care of dairy cows and heifers, yet although the truth of the old saying — "The bull is more than half the herd"—is universally acepted, we hear very little said about the proper feeding and care that should be alloted to this very important part of the dairy business. The reason for this apparent apathy is doubtless because there is a greater fund of evidence and knowledge pertaining to the females. There has been a great stimulus to the collection of data pertaining to cows, for it is from the dam that the direct iincome s realized.

Many catlemen have come to the realization that a bull with superior ancestry is absolutely essential to the building up of a profitable herd, and do not hesitate at the item of cost when making the purchase. When considering the raising of a young animal to head the herd, the item of cost shuld not be considered with same idea of eceonomy as in the rearing of heifers. From the birth of the young bull, it should be the practise of the owner to see that he gets the best of care and feed, in order that he may make the maximum growth and dvelopment. There is no definite data to prove that an unthrifty condition of the sire, as regards to growth and size, caused by improjer feeding and care will have a deleterious effect upon his offspring, yet everyoneis aware that the visitor or prospective purchaser passing through the barn wonders whether this condition of undersize is the resultof poor feeding or poor breeding.

The price now offered for skim milk is quite attractive, compared to what it was a couple o fyears ago; however, in the opinion of the writer, the investmen of skim milk in a young bull will be amply returned with interest in later years. Bulls are seldom weaned later than six months of age; if possible, continue feeding the skim milk, even if only in small quantities, until they are eight, ten or even 12 months old. The aim should be to produce a growthy, thrifty animal. This end can be secured with more certainty through the feeding of milk with grain and good roughage than by the pursuit of any other course.

The young bull should be separated from the other calves at six months, a small ring placed in his nose, and taught to lead. This ring will last about one year, when another should replace it. At the end of the next year another heavy ring should be put in. A weak ring in the nose of a strong bull often spells disaster.

After the bull is 12 months old, he may be used for light service, but should not be used liberally until after two years of age. It is quite generally conceeded that using young bulls to excess causes early impotence. To some, this may not appear to be an important point, for many cattlemen do not keep their bulls after they have attained an age of two or three years. This practise should be discouraged, for a bull will have but few, if any, daughters in milk at this age, and his value will still remain unknown.

It is abslutely essential to the well being of the bull that he receive exercise. This may provided by housing him in a cheap shed, adjoining an exercising yard or paddock to which he has free acoess, or he may be turned out at certain times each day. Some dairymen use a treadmill for exercising their bulls, others tie him to a tight wire suspended overhead in such a manner as to allow more or less liberty, but yet always in their control. We have used both methods with indifferent success. For our conditions, we have have found that the most successful method of exercising our bulls is working them under a yoke. We have trained without diffiiculty eight bulls of different breeding to work under the yoke, and have been well satisfied with this system as a means of securing the necessary exrcising that the sire must have to remain potent. Lambert S. Corbett, Professor of Animal Industry, University of Maine.

CHOOSING MEALS FOR FEEDING HERD DURING THE WINTER

The most successful cattle feeders purchase and feed profitably a reasonable supply of mill feeds and concentrates. What feeds to select and when to purchase are at present most difficult problems.

The man who buys meals in small amounts as needed and buys the meal cheapest per hundredweight is a poor business man and does not appreciate the real values of feeds.

The feeder who has rich and succulent farm-grown roughages need purchase and feed less grains and meals and the meals purchased need be of a less concentrated nature. The intelligent cattle feeder always raises on his farm the best possible quality of feeds and makes his purchases of grain and meals to balance the rations properly.

There are but two correct methods of choosing meals when purchasing. Which method to follow depends altogether on the quantity, quality and variety of the farm-grown roughages. Purchases should be made on the basis of the protein contained in a digestible form or the total digestible nutrients. (protein plus starches plus fat x 2 -14.)

For example, red clover hay contains 152 pounds digestible protein and 1,018 pounds total digestible nutrients per ton, timothy hay has only 60 pounds digestible protein and 970 pounds total digestible nutrients per ton, corn ensilage has 22 pounds digestible protein and 354 pounds total digestible nutrients per ton, and mangels or swedes about half as much of each. Clover, or better, alfalfa, hay supplies the protein of a ration in about the correct proportion, while timothy hay must be supplemented with a rich protein meal. Again, corn ensilage, although bulky, supplies the cheapest total nutrients of any feed, but requires a protein meal to balance it. Ensilage made from green clover, oats, or oats, peas and vetches, is worth almost as much as good corn ensilage.

The same relationship exists between all the meals which are purchased for the feeding of stock. The farmer who has grass hay (such as timothy) and corn ensilage, must buy meals on the basis of cheapness of protein. At present prices these in order of cheapness are: Cottonseed meal, dried distillers' grain, linseed oil meal, gluten feed, wheat bran, shorts, middlings, and oats. If, on the other hand, he has alfalfa or clover hay, corn or other good silage and roots he need purchase less meal and should select on the basis of cheapness of total digestible nutrients. At present prices these in order are: Dried distillers' grains, beet pulp, wheat middlings and bran, gluten feed, cottonseed meal, linseed oil meal, and oats.

Every farmer can in a few minutes with present feed prices and the analysis of digestible nutrients, verify the above and select his purchases accordingly.

Certainly if he wishes to get the most value for his money he must follow these four rules:—

.1 Buy the highest quality feeds, not those containing dirt, filler and indigestible fibre.

2. Buy feeds containing the desirable elements in the cheapest form.

3. Buy co-operatively, in car-load lots if possible and thus save extra freight charges and commissions.

4. Buy when markets are lowest, usually in the summer and fall, and save the storage, handling charges, and, usually, extra profits made by the millers and dealers.

PURE WELL WATER ON THE FARM ABSOLUTELY ESSENTIAL TO HEALTH OF FAMILY AND ALL LIVE STOCK

One of the greatest menaces to the health of many communities is the impurities of the water supply. Decayed food is readily condemned because the dangerous parts can easily be seen, but the drinking water used by man and beast, although often more dangerous to life and health, is allowed to pass without a question because the elements of destruction are not visible to the naked eye. These, however, are often the more dangerous of the tow and every attention possible to secure a pure water supply on the farm should be given in order to safeguard the interests of the family in the matter of health preservation.

Good health is the most important asset of any man's business or physical outfit, and while on the farm in almost every case it is possible to secure a practically pure supply, there are thousands of farms where the water is not fit to drink either by man or beast.

Pure water is even more necessary to health than pure food, and the wise man who wishes to purchase a farm will look a long way for one before he will decide to locate on a place where this important feature is not guaranteed.

The outlay that is necessary to secure adequate protection against this form of menace to good health is not necessarily very great, and no man, on account of the few dollars it will cost, can afford to jeopardize his own health or that of his family. In many cases all that is needed is a little care, while in others the cost will be considerable, but in any case it will be much cheaper than drinking impure water.

There are three common causes of water contamination—first, from seepage, such as water soaking through the soil in filthy quarters; second, by water flowing over the surface of the ground and falling into wells, and third by foreign substances getting into wells for want of proper protection, such as toads, mice, worms, etc., and the droppings of poultry or other animals running in the vicinity of these unguarded water supplies.

Underground water is the chief source of supply on the farm, and in the majority of cases this comes from dug wells which are located dangerously near barnyards or other places from which water can find its way into the well by seepage. It is estimated by some that water filtering through ten feet of soil will become purified on its way, but this will depend on the character of the soil. If it be of a coarse, gravelly nature, little change will be made in the character of the water, hence to be sure of freedom from contamination from this source the well should be located far enough away from such a place to avoid any danger from water passing through a strata of this nature into the well. Even though a well is not situated near a barnyard or other source of infection, it may become infected by water passing over the surface of the ground. All land contains more or less impurities at the surface, hence all surface water is contaminated to a greater or less degree and should never be allowed to enter into a well, directly at least.

In order to avoid any possibility of surface water getting in a well the first requisite is to have the well located on land well above the level of the surrounding premises. If the land is comparatively level and no opportunity of selecting an elevated position is possible, then the ground should be raised in the vicinity of the well by grading or drawing clean earth from some other place for this purpose.

In loating a new well, all the features necessary to secure pure water should be kept in mind as well as the thought of convenience, which should be sacrificed largely, if necessary, to secure pure water. However, this is not as serious a proposition as some consider, for water can be conveyed by iron piping at reaonable expense to a considerable distance, and instead of having two or three wells for the farm, one good one should be put in a safe place and made to do service for both dwelling an barns. On ac-

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This is true whether you have no separator, or an inferior or half-worn-out machine, or even an old style De Laval.

In cold weather your waste of butter-fat is relatively greater, either with gravity skimming or a poor separator; and at present prices for cream a De Laval would very soon pay for itself out of its own savings.

See the nearest De Laval agent right away and let him show you what the De Laval will save for you. If you do not know the local De Laval agent, write direct for any desired information.

The De Laval Company, Ltd.

MONTREAL PETERBORO
WINNIPEG VANCOUVER

count of the danger from seepage a well should not be placed less than one hundred feet from possible sources of infection, such as barnyards, manure pits, privies, etc.

There are three kinds of wells in general use throughout the country—dry wells, driven wells and drilled wells.

Of these the dry well is more liable to contamination than either of the others on account of the difficulty of making the first ten feet or so impervious to surface water and insects. This con only be done by the use of such materials as cement in laying up the curbing and carrying the same to a sufficient height to prevent any surface water running into it, which at the same time will prevent any insects from gaining entrance except at the top. This part of the well should be carefully covered with close fitting joints so that no cracks or open places will be present where worms or dirt can get into it. A good arrangement is to cover with a layer of strong boards, over which to lay a sheet of galvanized iron, this again to be followed with another layer of wood, all of which should be securely fastened to oak or other good sills imbedded in the cement. By this arrangement no surface water can gain admittance to a well and all liquid must partake of the nature of filtered water and be pure and wholesome.

Driven and drilled wells put own through an impervious layer into an open one is likely to meet with pure water and will continue so if properly protected at the top. On account of the narrow opening in these wells they are easily protected. A close fitting plank cut through the centre and fitted around the pump is all that is necessary if proper drainage is provided for, which should be the case whether the pipe comes above the surface of is cut off a few feet below to provide against frost.

If for any reason you are suspicious of well water either at home or school, notify Professor D. H. Jones, Basteriological Department, O. A. College, Guelph, or Professor Frank T. Shutt, Dominion Experimental Farm, Ottawa, who will send you a sterile bottle with directions for obtaining samples. Upon receipt of the sample, Professor Jones or Professor Shutt will make a test free of charge and will promptly forward you an analysis.

Meanwhile guard the health of your family by disinfecting the water used. Dissolve a level teaspoonful of chloride of lime in a teacup of water. Dilute this quantity with three cupfuls of water and add a teaspoonful of the diluted solution to each two gallons used of drinking water. Stir thoroughly. The water will be without taste or odor and will be safe for human consumption.

Failing this efficient and inexpensive method, boil all water used for at least twenty minutes.

Where an old well has become poiluted and it is in a good location, and one wishes to continue its use, it may be made safe by tearing out the old lining to a depth of ten feet and relaying it with cement backed by a foot of puddled clay of very close texture and then following the above directions as regards the elevation of ground to prevent contamination from the opening by surface water or dirt. The water in the well should be pumped and the well washed down thoroughly and cleared out.

SALT AND BRAN SHOULD FORM PART OF ANIMAL'S RATION

A local veterinary said in my hearing a few days ago that salt and wheat bran were two of the surest safeguards against fatalities with live stock that he knew anything about. "If more wheat bran were fed and if salt were kept before stock at all times there would be a great saving in veterinary bills," he said. "The majority of cases that have demanded my attention for the past several months are cases of indigestion or disarrangement of the digestive organs in some manner. Many feeders try to correct this without removing the cause. One o fthe most frequent causes of these disarrangements is the lack of salt in the regular diet. Stock fail to drink enough water and there is nothing in their ration to act as even a mild cathartic, consequently the digestive organs become cloggsd.

In speaking further in regard to the need of salt in the daily ration the doctor added that it was poor policy, as a rule, to mix it with feed. He advocated the use of salt in open boxes where livestock could have access to it at any time and his opinion is borne out by most breeders and feeders who have made a success of their calling. Many of them use rock salt but a box sheltered from the elements and kept filled with ordinary barrel salt answers the purpose quite as well. In the course of our talk I asked him if there might not be donger of stock eating too much salt when they had this easy access to it. He said there was no danger.

"I tried it first," he explained, "with a stallion which I owned. I placed a box of salt in his stall and for several weeks that box was the first thing he visited when being turned into his stall. He would invariably go to the salt box before going to his corn. Now he only visits the box occasionally. His system des not demand the salt that it formally did for the simple reason that the need for it is being regularly supplied. For the past six years this salt box has never been empty and the horse has never shown the slightest indication to digestive trouble although formerly he was so afflicted."

The use of both salt and wheat bran as a regular part of the ration for livestock is shown to be vluable when the feeding rations of successful breeders are examined. Bran has a place in almost every ration from the laying pen of poultry to the barn where the dairy cow is being tested. In itself it is an excellent bowel regulator aside from its feeding value and the more one uses it in the ration the more indispensable it seems. If wheat bran and common barrel salt will aid in keeping the disorders away from our live stock it is a good plan to make use of them and no one who has ever supplied salt regularly to herd or flock and then suddenly failed to supply it has failed to note the ifference which it makes. It takes but little time to build suitable boxes that will hold salt and to shelter them from the wind and rain and once the yare made it is a small matter to keep them replenished. The old fashioned method of throwing a handful of salt on the ground once or twice each week is both wasteful an inefficient and it seems to me that the open box plan is worthy of a trial even by the skeptical.—W. C. SMITH.

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We will ship you a bag conaining 200 lbs. of nice selected lumps in sizes suitable for your stock—upon receipt of two dollars.

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A-shaped portable hog houses are built in various sizes. Very many of them, similar to the one referred to, are 7 feet from ridge to runners with a floor space 8 feet square. Others are built with a six by eighthsrtaoo are built with a 6 by 8 foot floor, the ridge being placed from 6 to 6½ feet above the floor. The size of such a depends on its use. If it furnishes quarters for one medium sized boar, it may be smaller than if for a sow and litter. Still larger houses of this type are sometimes used to shelter a number of growing pigs.

Remember that Canada is asked to save food so that Britain and our Allies may not be in want and the successful ending of the war prevented. It is not to cheapen the cost of living for ourselves primarily—but to win the war for democracy—that Canadians are asked to economize particularly in the use of wheat and meats.

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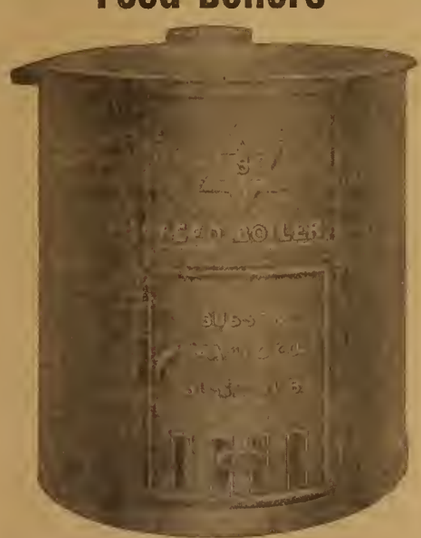

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If you are in the market for any of the above articles, it will pay you to get our prices.

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THE HORSE

TENDONS AND LIGAMENTS

A tendon is a mass of fibres which connect a muscle to a bone. A ligament, on the other hand, is a structure of fibre resembling quite closely those that make up the tendons but differ in this respect from them, viz.: Ligaments connect one bone with another. An example of the ligaments of a horse are the suspensories of both front and hind legs, besides which there is shown in his hock both tendon and ligament. Just above the hock there is a strong mass of fibre which stands out clearly, which you can grasp with your fingers and is called the hamstring, or more correctly speaking the "tendon of Achilles." Now just below the hock and connecting the bone that holds the hamstring above, there is another structure, a ligament which connects this part of the hock with the bone below. This is known as the Calcaneo Cuboid ligament, the straining of which constitutes the common unsoundness in horses to which has been given the name of curb.

Every joint in a horse's leg is formed by ligaments holding the bones in position. The tendons are allowed considerable play, as the muscles to which they are attached lengthen or contact as the horse moves his limbs. On the other hand, the position of the ligaments are supposed never to change, their duty being to hold the bones together in proper relation to one another.

Balance of the Foot

Damaged tendons and injured ligaments are the bugbear of the owner and trainer of race horses and the frequency with which accidents to these parts are met with go to show that they are due to the fact that the foot of the horse on is ground surface is in improper relation to the ligaments and tendons above. Horses that are barefooted and accustomed to running out to grass neevr suffer from damaged ligaments, though now and again a curb may be formed. A horse troubled with inflamed suspensory ligaments will invariably be found to have his heels too low, thus causing an extra strain on these ligaments. When the tendon above the ankle gets into trouble, curiously enough the cause is directly the opposite from that which produces damage to the suspensory ligament. In these cases the horses's foot is too short and his heel usually too high.

In preventing damage to tendons and ligaments, it is necessary to so balance the foot that while a correct angle must be obtained neither tendon nor ligament should suffer as a result of extreme efforts.

To establish the desired position of the foot it is essential to so prepare the foot that, when it is shod, the shoe will be worn level from toe to heel and so that both sides may wear equally. Indeed nearly all that is accomplished in the way of improving a horse's gait and speed and preventing him from hitting his knees and other parts is accomplished in the way of improving ? st- shrdlu etaoin same manner.

Cocking of horse's ankles, whether at front or back, or both—is a coddition brought about by the heels being too low; the joints above, in trying to compensate for the added tension forced on the tendons, yield an cause the cocking of ankles. There is another conition known as bucked knees, or knee-sprung, that arises from the same cause—heels too low.

Knee-Spring Compensation

Horses whose joints will accomodate themselves to a faulty position of the knee, and which become cocked in the ankle, or knee-sprung, thereby save their tendons and ligaments from break down. It is that other class whose joints refuse to compensate, that are more likely to break down as a result of the faulty position of the foot in its relation of the arrangements of the ligaments. When a tendon shows damage, lower the heel and lengthen the toe a little. When there is incipient damage in the suspensory ligament the rule is to raise the heel and shorten the foot slightly.

As rgards the proper length of a horse's foot, it may be added that excesisve length and extreme shortness of the front foot of a horse are dangerous in the extreme. The long foot almost always carries with it a low heel, and such a foot will result very often in damaged ligaments. On the other hand an extremely short foot causes increased friction in the horse's gait and not only tires him, but is very liable to damage the tendons; this is especially the case where the foot is shortened a great deal at one time.

If we begin with a colt and level his feet as nature intended them to be, in relation to his legs, the tendons and ligaments will be in such position at all times, excepting in cases of accidents, that they are prepared to take care of the strain that is put upon them, and, as a result, they will keep sound.

If, on the other hand, we find that the colt has had his feet dressed in an unnatural manner, so that extra strain is put on the ligaments or tenons, then we must go about the matter of correcting the fault.—B. C. T.

EFFECT OF GOOD ROADS ON PULLING POWER OF HORSES

A very interesting experiment has recently been concluded in California to determine just how much a horse pulls when he draws a ton.

A good draught team was used for this purpose. The horses weighed 1600 pounds each. They were hitched to an ordinary farm wagon, and puled a load of 6.000 pouns over different kinds of roads. The wagon was a standard farm wagon with steel axles of equal length, wheels 38 and 46 inches in diameter, and four-inch tires.

A recording dynamometer, known as the Iowa type, was used to register the tractive force of the team. This instrument makes a record of the resistance on a strip of paper under a recording pencil, and after the test, the total pull of the team can be read off in pounds. The cord of the test is as follows:

On a concrete road, unsurfaced, in excellent condition, the total pull on the load was 83 pounds, or 27.6 pounds per ton.

On a concrete road with ⅜ inch surface of asphaltic oil and screenings, road in excellent condition, the total pull was 147.6 pounds or 49.2 pounds per ton.

On the ordinary macadam road in excellent condition, the total pull was 193 pounds or 64.3 pounds per ton.

For a gravelled road, compact, and in good condition, the total pull was 225 pounds or 75 pounds per ton.

An earth road, firm, with 1½ inches of fine, loose dust, the total pull was 276 pounds or 92 pounds per ton.

An earth road, with mud 4 to 6 inches deep, but soil firm underneath, the total pull was 654 pounds or 218 pounds per ton.

On graveled road, before the gravel had been compacted, but when it was in ordinary loose condition after it had been placed upon the road, the total pull was 789 pounds or 263 pounds per ton.

The above shows very well what great advantages good roads have as far as the hauling properties of a team are concerned.—E. B. House, Colorado Agricultural College.

KNEE SPRUNG HORSE

Editor:

Horse five years old is weak on his knees. Can anything be done to strengthen them?

Renfrew Co. C. O.

Weak knees among horses are generally contracted amongst those who are driven at hard and fast work. It also appears on horses that stand on floors that have a big slant, high in front and low behind, or from feeding out of a very high rack. Horses with small knees are more subject to knee weakness than those with strong knees. An animal may be knee sprung and still be a good work horse. See that the floor of his stall is level, and do not put on shoes with high heels. If you are working the horse, bathe the legs with cold water and salt twice a day; after bathing rub dry and apply white liniment made as follows: Liquor ammonia, 1 ounce; tincture of arnica, 1 ounce; tincture of opium, 1 ounce; oil of turpentine, 1 ounce; alcohol, 1 ounce, and water to make one pint. If you do not want to work the horse perhaps you could blister the back cords once a month with pulverized cantharides 2 drachms, and 1 ounce of lard or vaseline mixed together. Tie his head short for a few hours so that he cannot bit it, then in three days, grease it with good clean lard. Repeat in a month. In the blister treatment do not work him.

HORSE TALK FOR OUR HORSEMEN

I have a nervous horse. The only satisfaction I can get is to drive him regularly and work him hard enough to take off the nervous edge. In handling such an animal I wouldn't put him where he could do much damage. Throw away the check and blinds, for a nervous horse is more excitable when he cannot see what is going on behind him, and a check worries a horse a good deal.—H. P.

We, too, have had trouble with a nervous mare that would not stand to be hitched up, and insisted on starting before we were ready. We insisted firmly but gently, that she stand until we were ready to go, and when she balked we paid no attention to her, not urging her nor speaking to her. Later we stopped her when she was ready to go, and made her wait for a signal, and she soon got over the habit.

Gain the confidence of your horses by talking to them. Kindness and patience will accomplish almost anything with a nervous horse.—L.

PROTECT THE HORSE'S HEELS

Here is a clever idea put to use by a man whose ingenuity has helped him to own a good farm. Harvest at his place is a busy time and he has learned that every little thing to conserve man strength and patience is worth while in keeping men and getting good service from them. He has a pair of wheels from an old grain binder truck with a short axle and

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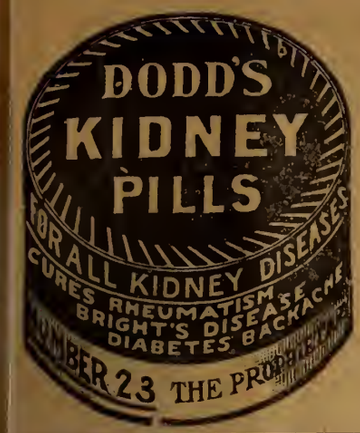

ongue and a heavy hook at the back of the axle, bolted securely through. In hoisting hay he hitches the team to this two-wheeled truck, hooks the hay rope into the hook at back of axle and tis does away with bumping the horses' heels with doubletree and saves a man from hanging onto the rope while the horses are turning and coming back after the load is up. In dragging logs, brush or anything with a chain, this truck comes in handy on fairly smooth ground.

Have you a pair of binder truck or old mowing machine wheels to try it with?

WATERING THE HORSE

When shall the working horse be watered, before, after or during meals? This is a question that has been variously discussed by authorities on the horse. According to Tangl, whose investigations concerning the time of watering horses are the most complete recorded, it doesn't make any difference, though circumstances may favor the one or the other. He shows that the important thing is to adopt a reasonable, convenient system of watering horses and then to stick to it. It is dangerous, of course, to allow a horse to gorge himself with cold water when he is heated from hard work, but a moderate drink from the stock tank will refresh him without any harmful effects. The exercise of good "horse sense" is more important than the matter of just when at meal time the water should be allowed.

WOLF TEETH

The "wolf teeth," so much spoken of by horsemen, are little, plain, short-rooted teeth sometimes found one on each side, just in front of the first grinding tooth (premolar) of the upper jaw. The wolf tooth is merely a vestige of the seventh grinder, or anterior premolar of the prehistoric horse. They have no influence whatever upon the eyes, common erroneous belief to the contrary, and, therefore, are not the cause of "moon blindness" (periodic ophthalmia), and need not be removed. Often they are "shed" by the time a horse is eight or 10 years old. Leave them alone.

THRUSH

The cause of thrush in horses' hoofs is uncleanliness, standing in filthy stables, especially in their own excrement. The filth remaining in the foot a long time and excluding the air, sets up decay which runs into ulceration. When once started it is hard to cure. You say reasonably bedded, but all depends upon the view which one takes in horse comfort. A cow that has to sleep or rest on a half bedded hard cement floor will not produce the same quantity of milk as she would if comfortably and cleanly bedded. A horse is the same. He cannot give the same service if he has to stand or sleep on a hard bed and amongst his own filth.

Trim off all the ragged parts of the frog, clean out all the holes and cracks with a case knife or similar implement, then apply a linseed poultice, with charcoal powdered over the surface. After twenty-four hours clean it all off, and dress the affected parts with calomel well introduced into all the cracks. Repeat this once or twice and when dry dress the part with pine tar.

FALL FEED FOR FOALS

When the pastures dry up in the fall the foal sometimes gets a setback. The time after the grass becomes a little scarce and before fall feeding begins, is an important period in his development, for a foal or any other young animal never makes up the growth lost at any time during its growing period. They should be kept in good, thrifty, well-fed condition at all times until maturity is attained, if the best is to be made of them.

Colts that belong to working mares should have a separate feed box and receive a little grain each time the mother is fed. Those on pasture should be provided with a creep where grain can be kept available for the foal at all times. If these methods are followed, the colt will continue to gain and will not shrink when weaning time comes. Equal parts of crushed oats and bran make a good ration for the young foal.

LICE COMMON PESTS

Lice are the most common parasites on farms. Equal parts of lard and kerosene rubbed into the hair of horses and cattle, or into the feathers of chickens, will destroy lice, according to the University of Missouri College of Agriculture. Any of the coal tar preparations are effective when used at the rate of three ounces or six tablespoonfuls to a gallon of water. This can be sprayed on hogs. Cattle or horses with heavy coats must have it rubbed in thoroughly.

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A TIMELY WARNING

If you home should catch lre today or to-night, have you a ladder handy to get on the roof? Or would you be compelled to borrow one from your neighbor or run to the back end of the orchard for your own? It is pointed out by first inspectors that many of the fires in the country start from sparks on the roof; a bucket of water when the blaze first appears is worth a barrel after the fire has a few minutes headway. A strong ladder makes it possible to reach vres with little trouble.

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POULTRY.

FATTENING THE POULTRY FOR MARKET WHEN FLOCK IS CULLED IN THE FALL

Fall is the time of the year for culling the flock, the time of the year when all of the birds that are not to be kept for winter layers should be sold off. All of the cockerels that are not to be kept for breeding purposes as well as all of the hens and pullets that are not to be kept for layers should be culled from the bock and fattened for market.

A plump cockerel or hen is just as superior to a scrawny fowl as is a corn fattened steer to a raw range animal. The consumer as well as the poultryman recognizes this fact and there is always a ready market which will pay as high as six to eight cents a pound more for fattened birds than they will for the same stock before it has been fed out.

Birds which are to be fattened should not be allowed to run. They should be confined in small pens or coops in order that they may not exercise too much and thus run off the fat as fast as it is put on. Commercial poultry feeders use immense batteries of specially constructed coops for fattening but for the average home fattening plant a single coop or a smaller battery can be cheaply constructed.

These should be made about 35 inches in length by 24 inches deep and 16 inches high. They may be made as are any other slat coops but with half inch mesh hardware cloth as a floor instead of the common flooring; this will allow the droppings to pass through and will greatly facilitate cleaning.

A crate of this size will hold about six to eight birds and as many coops as will be needed should be provided. If more than one crop is to be used they may be arranged in blocks of eight coops very conveniently. In this manner the coops are placed one on top of the other, four coops high, and back to back. This also does away with the cost of a top for each coop.

A further convenience in keeping the coops clean is a sheet iron tray placed under each floor to catch the droppings. These trays are so fitted into the coop that they may be slipped out, emptied, an dput back in place with very little inconvenience.

Some sort of a tight and removable trough should be placed across the front of each coop. This eliminates the necessity of opening the coop in feeding and also keeps the birds from trampling in their feed. Ease in cleaning is another item in favor of this kind of a feeding device and the birds can easily eat by poking their heads between the slats on the front of the croop.

It is well too, to have clean, dry, well ventilated and temperate rooms in which to do the feeding. A concreted basement makes an ideal feeding room provided that it is airy and dry and that it can be kept at about sixty egrees Fahrenheit. The idea in fattening fowls is to make them eat as much food as possible and to do this they must be kept in sanitary quarters where they will be protected from draughts and from excess of either heat or cold. Nothing will take a bird off feed any quicker than will a warm, stuffy or damp fattening room.

Feeds to Use

For fattening, birds, like steers, should be selected for feeder type. A weak fowl will not make a good feeder any more than will a scrub steer. Vigorous, shapely birds make the best feeders and the best gainers and scrub fowls should not be put into the fattening pen.

As to the feeds to be used the main thing to remember is that meat is the one thing that is wanted and that fat is not necessarily meat. An all grain ration tends to lay on fat rather than meat and fat which is placed on the bird in lumps has but little value in making the flesh tender and juicy. Another mistake that is sometimes made is that of feeding a laying ration to birds which are intended for fattening.

Probably no feed is better for fattening than is buttermilk when it is properly combined with other feeds. Milk fed birds will lay on their fat as will not other fowl. Instead of putting it on in great lumps it seems to run the flesh and fat together and the result is a plump fowl with firm yet tender and juicy flesh. This, in the eyes of the consumer is the most desirable combination that can be had.

Two pounds of buttermilk to every poung of grain fed is a good ratio for fattening fowls. Purdue uses a ration consisting of 1 pound of shorts, 1 pound of ground oats and 2 pounds of corn meal to which is added 8 pounds of buttermilk.

Time to Feed

The best manner of feeding this ration is to mix the buttermilk with the grain and shorts and to allow the mixture to stand for twelve hours. As the fowls are fed twice a day, preferably at six in the morning and again at six at night, the ration may be mixed after each feeding and allowed to sour until time for the next feed. In this manner over-souring is prevented along with the consequent disorders which may arise from feeding such a ration.

Feed should not be left before the birds longer than thirty minutes. The reason for this is that by feeding only twice a day and by keeping the birds hungry they will eat more than if permitted to gorge themselves at feeding time. Where feed is left before them they will eat off and on and never become so ravenously hungry that they will overeat. Water is not necessary excepting in very warm weather.

Two weeks is the customary length of the feeding period but no length of time can be given as exact. The birds should be killed when they are "ripe" just as with any other crop. This may seem like a strange word to use in conjunction with the poultry crop but a bird is ripe when it has attained good flesh. At this time he will lose the red color and his face will become a pale pink. Birds that have become ripe are ready to kill.

This is best done by the sticking and bleeding method. Experimental date seems to point to this as the best method of killing as the birds may then be dry picked without tearing the skin provided the killing has been properly done. Cutting off the head, unless for local markets or immediate consumption but opens up the way for the germs of decay to enter. It is far better to leave the dead bird with the head as well as the intestines intact as this gives less chance of spoilage than where the skin has been broken. Broken bones should always be avoided.

The main points to remember in fattening market poultry are that good feeders should be selected and that the birds should be kept on feed from the very start to the en of the fattening period. Feed which has become too sour may cause diarrhoea or warm feeding quarters may detract from the bird's appetite. Less moisture in the food or a little tallow added to the ration will serve to correct the former ailment and cooler quarters is the corrective should the lost appetite be due to the latter. A little charcoal may also help to correct the ailment. This may be mixed in with the ration.

At all times the bird should exhibit ravenous appetites and should eat greedily. Unless they do this something is at fault; either with the manner of feeding or with the kinds and qualities of the feeds used.

Correct the fault, whatever it may be, and turn out well fattened birds that will bring the highest prices on the markets. Fattened fowls bring the top prices and it is just as well for the producer to have this margin of profit as it is to give it to the commercial poultry fattener.

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POULTRY HOUSE CLEANING THAT WILL INCREASE EGG-PRODUCTION AND PROFITS

Many of the diseases which cut down farm poultry profits can be traced to a lack of sanitation in the houses. We have found that the open-front house is the first step in the prevention of disease. Hens need plenty of fresh air and they can stand a cold temperature. It is damp, impure air and draughts which cause colds and roup and devitalized flocks. The house with the open front and the tight back and sides insures a good supply of fresh air and it will not be damp if it is kept clean. Old burlap sacks can be used on frames and these cheaply made curtains can be lowered on extremely cold nights or when the storms are blowing from the south.

In maintaining the house in a sanitary condition we can begin with the floor. It must be raised sufficiently above the outside ground to keep out the moisture. If the foundation of the house is of cement, and the cement wall extends a foot above the ground, it pays to fill in that extra foot with gravel and sand, and in that way insure a dry floor. Cement makes an excellent floor when thickly covered with litter, but an earth floor will be satisfactory in the farm poultry house. If the cement wall extends deep enough into the ground to keep out rats.

The litter should be emptied into the house until it is about one foot deep. The birds will soon scratch it to pieces and work it down to a depth of about four to six inches. Wheat or oat straw makes an excellent litter. Shredded corn foder is also used by some poultry men, and it does not seem to be broken up as rapidly as straw. When the litter becomes tough and slightly moist, we know that it is fine fertilizer, but unsafe to leave in the poultry house, and it is removed and spread on the berry patch, or on some field requiring the fertility. Dirty litter is the cause of many sick birds during the winter, and it costs very little to change the litter on the farm where there is usually an abundance of straw.

The dropping board is necessary, and it should be cleaned every day. Hang a bushel basket and a hoe on convenient nails in the poultry house, and make it a regular duty to clean the board immediately after feeding the birds. The droppings can be stored in barrels behind the house, until they are ready to be spread on the garden. When a dropping board is not very carefully constructed of matched lumber, there will be many cracks remaining to catch the dirt and form breeding places for mites. Covering the board with heavy roofing paper will assist in keeping it clean for at least one year.

The roosts should be smoothly planed "two by three's" attached to cross-pieces which can be hinged to the rear wall of the house. When cleaning or spraying the dropping boards the roosts can be raised and hooked to the ceiling. This enables the poultryman to thoroughly spray the under side of the roosts where mites are especially apt to hide. We have found that the mite problems consists in protecting the roosts. If we paint new roosts thoroughly with kerosene oil and then renew the application once each week in the summer and once each month in the winter we have found that there is absolutely no trouble from mites. Some breeders add one part of crude carbolic acid to ten parts of the kerosene and find that it is slightly more effective. This mixture makes a cheap and efficient disinfectant for spraying the entire house. The barrel orchard sprayers are desirable for spraying poultry houses. Some breeders attempt to spray their houses with small hand potato sprayers but this means hard unnecessary work and results are often unsatisfactory. Whitewash is still used on many farms and it gives the interior of the houses a clean bright appearance. However we have found that the whitewash has a tendency to make the house slightly damp and we believe that the oil sprays are more effective and less expensive to apply.

The feeding utensils are frequently disease carriers. Water pails should be scalded frequently and placed on a low table where they will not be

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scratched full of litter. When wet mash is fed in troughs, the troughs should be hinged to the wall, so that they can be protected from the litter after feeding time. They should also be carefully cleaned at frequent intervals. Buttermilk and sour milk should be fed in ordinary crocks, as they are heavy and not easily tipped over, and they can be scalded without danger of breakage. These crocks should also be placed on the table, to protect them from the dirt, when the birds are scratching in the litter.

Perhaps the most important point in keeping a house in a sanitary condition is to breed from strong, vigorous stock and keep the birds free from lice. We treat every bird with blue ointment twice each year by rubbing in a piece beneath the vent about the size of a pea and then giving a slight smear under each wing. I have never seen lice in poultry houses unless they were also on the birds and by protecting our birds with the blue ointment we have found that our lice troubles end immediately.

Placing permanganate in the drinking water until it is a dark crimson will assist in preventing the spread of colds and this is an important factor in keeping the house in a sanitary condition. Poultry houses require constant attention if the flocks are maintained in the healthy condition which brings profit to the farmer. It only takes a short time each year to carry on the system of sanitary management which makes the farm flock an important item in the yearly income. It simply means an hour here and there and a few half days with the team, and while the work can never be neglected entirely it really does not take an exorbitant amount of time compared with the satisfaction and profit to be derived from a healthy flock in a sanitary house.

R. G. KIRBY.

THE FARM FLOCK

(By George Robertson, Poultry Division, Department of Agriculture.)

As It Was.—It is but a comparatively short time since farmers regarded the keeping of fowl as something beneath their notice. What fowls were allowed on the premises, were looked after by the women of the house when they could get time, or were not looked after at all, roosting any place round the outbuildings where they could get the best shelter, and often going hungry in the winter, simply because the farmer regarded as wasted, the food they consumed.

As It Is—However owing to the high prices paid for new laid eggs and high class poultry, the fact that it is now possible to get cash for these products instead of store trade; many farmers have turned their attention to the one time disposed hen and opinion has so changed tha tthe poultry work is now regarded as the most profitable on the farm.

As It Should Be.—Every farm should have its flock of fowl, the size will depend on conditions and the individual taste of the owner. One hundred may be regarded as suitable for ordinary conditions and these should be as well housed and as carefully tended as any other live stock on the farm.

The Manager.—It will be found that where some one person is placed in charge of the flock that better results will be obtained. An able bodied boy or girl if given some share of the profits as an incentive, will, with a little guidance, usually make an ideal manager and it will also hep to interest them in farm work.

The Flock

It is not advisable to keep hens of the Rock type after they are two years old except in cases where individuals have proven to be of special value as breeders. Pullets are much easier to keep in laying condition, and usually will produce more eggs than hens, so that it is advisable to raise enough early chicks each year to renew at least half the flock. As fifty per cent. of the chicks raised will be cockerels, it may readily be seen that allowing for culling it will be necessary to raise more than twice the number of rhisks, as pullets required. Get the chicks hatched early in the season, as early chicks mean well developed pullets in the fall, and well developed pullets, properly handled mean winter eggs. It is the winter egg production that will to a large extent determine the profit on the season's work.

Kind to Keep

The question is frequently asked what is the best kind. The best kind for any individual, is the kind best suited to his conditions, but whatever variety is decided on, keep it pure so as to have uniformity in products. Under special conditions where eggs are to be the chief product, it may be advisable to keep one of the lighter breeds, such as the Leghorns, but for ordinary farm use one of the "general purpose" breeds such as the Rocks or Wyandottes will give the best results, as they will give good return in both eggs and market poultry.

Getting a Start

The best way to get a start depends on the time of year. If in the spring either day old chicks or hatching eggs may be purchased. These should be secured from a reliable breeder. In purchasing, don't ask for exhibition quality, if it is just utility stock that is required. So long as the stock you get is from a flock of large vigorous birds that are producers of even sized eggs, never mind about the finer points that are required in exhibition specimens. If in the fall, get a pen of vigorous early hatched pullets, or a pen of young hens that has been used for breeding purposes the past season. A vigorous early hatched cockerel is generally more reliable as a breeder than an older male.

Feeding

To secure the best results in feeding it is necessary to separate the hens from the pullets, as what will give good results with pullets will make the old hens too fat. There are many methods of feeding and each individual must decide for himself just what plan he will follow. The old fashioned method was to feed moist mash, but of late owing to the high price of labor, poultrymen, seeking for methods that would reduce cost of production, have found that the dry food system gives good results and so have very largely adopted it. In this system the ground grains are mixed, just as they would be in making the old style mash, but instead of getting enough for each feeding, enough of the mixture to last some time is placed in a hopper, where the hens can have free access to it, or a hopper can made with a hinged, cover so that it may be opened or closed at will. The whole grain is fed in the litter as under the old system. So long as the requirements are supplied the simpler method of feeding can be made the better. Pure water should be accessible at all times, sound grains in variety, meat in some form, green food and grit. Sour milk can be had on most farms and nothing gives better results for either raising chicks or feeding the layers. When the fowl are in confined quarters, feed them so that they will be eager for the grain feed, which should be thrown in a deep litter so as to keep them busy.

Marketing.

No matter how successfully production is managed the profit will to a great extent depend on the marketing. The ideal method is where the producer can sell direct to the consumer; if it is impossible on account of location to do this, aim to market so as to have as few middle men as possible. If you are not situated close to a good retail market, probably the co-operative egg circle method will be best. But under any system, care should be taken to market only high class products. If you are shipping to a circle send nothing but strictly new laid eggs of good size and color. If you have any eggs that are small or of uncertain age keep them at home for cooking, as the marketing of them will spoil your reputation and the price for your good eggs. If you are supplying private trade it will aid yu to better prices if they are put up in neat cartons on which is printed your name and any other information that may be thought advisable. The same care should be taken in marketing table poultry; see that it is properly fleshed and if sold dead that it is neatly dressed.

Endeavor to make every month of the year a selling month. Sell the surplus cockerels from your early hatches for broilers when the price is high, rather than hold them till fall and sell at a lower price as roasters. As soon as the breeding season is over sell off the old hens; they will fill in a gap between the time the broilers have finished, and the time the roasters are ready. They will bring much better prices than if held until the fall and they will not crowd the market, at the time the roasters are being sold, thus avoiding the glut and low prices usual at that time of the year.

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BUT little over a year ago, when the through tri-weekly service between Quebec and Winnipeg was inaugurated, it was predicted it would not be long before the equipment then adopted —a buffet sleeping car—would soon outlive its limited accommodation and warrant a more modern and commodious service. That day has arrived, and the "Western National," leaving Quebec 4.30 p.m., Tuesday, Thursday and Saturday, arriving Winnipeg 6.00 p.m., Thursday, Saturday and Monday, now carries as part of its regular equipment a through standard electrically lighted sleeping and dining car.

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The "Nationals" via the shortest route between Quebec and the Prairie City are catering to an ever increasing travel, and the latest improvements, which make them modern trains in every respect, will no doubt add to their popularity.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

SALLY ANN'S EXPERIENCE

By Eliza Calvert Hall

"Come right in an' set down. I was jest wishin' I had somebody to talk to. Take that chair right by the door so's you can get the breeze."

And Aunt Jane beamed at me over her silver-rimmed spectacles and hitched her own chair a little to one side, in order to give me the full benefit of the wind that was blowing softly through the white-curtained window, and carrying into the room the heavenliest odors from a field of clover that lay in full bloom just across the road. For it was June in Kentucky, and clover and bluegrass were running in sweet riot over the face of the earth.

"Yes, I'm a-piecin' quilts again," she said, snipping away at the bits of calico in her lap. "I did say I was done with that sort o' work; but this mornin' I was rummagin' around up in the garret, an' I come across this bundle of pieces, an' thinks I, 'I reckon it's intended for me to piece one more quilt before I die;' I must 'a' put 'em there thirty years ago an' clean forgot 'em, an' I've been settin' here all the evenin' cuttin' 'em an' thinkin' about old times.

"Jest feel o' that," she continued, tossing some scraps into my lap. "They ain't no such caliker nowadays. This ain't your five-cent stuff that fades in the first washin' an' wears out in the second. A caliker dress was somethin' worth buyin' an' worth makin' up in them days. That blue-flowered piece was a dress I got the spring before Abram died. When I put on mournin' it was as good as new, an' I give it to sister Mary. That one with the green ground and white figger was my niece Rebecca's. She wore it the first time to the country Fair the year I took the premium on my salt-risin' bread an' sponge cake. This black an' white piece Sally Ann Flint give me. I ricollect 'twas in blackberry time, an' I'd been out in the big pastur' pickin' some for supper, an' I stopped in at Sally Ann's for a drink of water on my way back. She was cuttin' out this dress." Aunt Jane broke off with a little soprano laugh.

"Did I ever tell you about Sally Ann's Experience?" she said, as she laid two three-cornered pieces together and began to sew with her slender, nervous old fingers.

To find Aunt Jane alone and in a reminiscent mood! This was delightful.

"Do tell me," I said.

Aunt Jane was silent for a few moments. She always made this pause before beginning a story, and there was something impressive about it. I used to think she was making an invocation of the goddess of Memory.

"'Twas forty years ago," she began musingly, "an' the way of it was this. Our church was considerably out o' fix. It needed a new roof. Some o' the winder lights was out, an' the floor was bare as your hand, an' always had been. The men-folk managed to git the roof shingled an' the winders fixed, an' us women in the Mite Society concluded we'd git a cyarpet. We'd been savin' up our money for some time, an' we had about twelve dollars. I ricollect what a argument we had, for some of us wanted the cyarpet, an' some wanted to give it to furrin missions, as we'd set out to do at first. Sally Ann was the one that settled it. She says at last—Sally Ann was in favor of the cyarpet—she says, 'Well, if any of the heathen fails to hear the Gospel on account of our gittin' this cyarpet, they'll be saved anyhow, so Parson Page says. An' if we send the money an' they do hear the Gospel like as not they won't repent, an' then they're certain to be damned. An' it seems to me as long as we ain't sure what they'll do, we might as well keep the money an' git the cyarpet. I never did see much sense anyhow,' she says, 'in givin people a chance to damn themselves.'

"Well, we decided to take Sally Ann's advice, an' we was talkin' about app'intin' a committee to go to town the follerin' Monday an' pick out the cyarpet, when all at once 'Lizabeth Taylor—she was our treasurer—she spoke up, an' says she, 'They ain't no use app'intin' that committee. The money's gone,' she says, sort o' short and quick. 'I kep' it in my top bureau drawer, an' when I went for it yistiddy, it was gone. I'll pay it back if I'm ever able, but I ain't able now.' An' with that she got up an' walked out o' the room, before anyone could say a word, an' we seen her goin' down the road lookin' straight before her an' walkin' right fast.

"An' we—we set there an' stared at each other in a sort o' dazed way. I could see that everybody was thinking the same thing, but nobody said a word, till our minister's wife—she was as good a woman as ever lived—she says, 'Judge not.'"

"An' them two words was jest like a sermon to us. Then Sally Ann spoke us an' says. 'For the Lord's sake don't let the men-folks know anything about this. They're always sayin' that women ain't fit to handle money, an' I for one don't want to give 'em no more ground to stand on than they've already got.'

"So we agreed to say nothin' about it, an' all of us kept our promise except Milly Amos. Hhe had mighty little sense to begin with an' havin' been married only about two months, she'd about lost that little. So next mornin' I happened to meet Sam Amos an' he says to me, 'Aunt Jane, how much money have you women got to'rds the new cyarpet for the church?' I looked him square in the face, an' I says, 'Are you a member of the Ladies' Mite Society of Goshen Church, Sam Amos? 'Cause if you are, you already know how much money we've got, an' if you ain't, you've got no business knowin'. An' furthermore,' says I, 'there's some women that can't keep a secret an' a promise, an' some that can, an' I can., An' that settled him.

"Well, 'Lizabeth never showed her face outside her door for more'n a month afterwards, an' a more pitiful-lookin' creatur' you never saw than she was when she come out to prayer-meetin' the night Sally Ann gave her experience. She set 'way back in the church, an' she was as pale and peaked as if she had been through a siege of typhoid. I ricollect it all as if it had been yesterday. We'd sung 'Welcome Sweet Hour,' an' Parson Page prayed a pra'r, an' then called on the brethern to say anything they might feel called on to say concernin' their experience in the past week. Old Uncle Jim Matthews begun to clear his throat an' I knew as well as I knew my name he was fixin' to git up an' tell how precious the Lord had been to his soul, jest like he'd been doin' every Wednesday night for twenty years. But before he got started, here comes 'Lizabeth walkin' down the side aisle an' stopped right in front of the pulpit.

"'I've somethin' to say,' she says. 'It's been on my mind till I can't stand it any longer. I've got to tell it, or I'll go crazy. It was me that took that cyarpet money. I only meant to borry it. I thought sure I'd be able to pay it back before it was wanted. But things went wrong, an' I ain't known a peaceful minute since, an' never shall again, I reckon. I took it to pay my way up to Louisville, the time I got the news that Mary was dyin'."

"Mary was her daughter by her first husband, you see. 'I begged Jacob to give me the money to go on,' says she, 'an' he wouldn't do it. I tried to give up and stay, but I jest couldn't. Mary was all I had in the world; and maybe you that has children can put yourself in my place an' know what it would be to hear your only child callin' to you from her deathbed an' you not able to go to her. I asked Jacob three times for the money,' she says, 'an' when I found he wouldn't give it to me, I said to myself, "I'm goin' anyhow." I got down on my knees,' says she, 'an' asked the Lord to show me a way, an' I felt sure he would. As soon as Jacob had eat his breakfast an' gone out on the farm, I dressed myself, an' as I opened the top bureau drawer to get out my best collar, I saw the missionary money. It come right into my head,' says she, "that maybe this was the answer to my prayer; maybe I could borry this money an' pay it back some way or other before it was called or. I tried to put it out o' my head, but the thought kept comin' back; an' when I went down into the sittin' room to get Jacob's cyarpet-sack to carry a few things in, I happened to look up at the mantelpiece, an' saw the brass candlesticks with prisms all 'round 'em that used to belong to my mother; an' all at once I seemed to see jest what the Lord intended for me to do.

"'You know,' she says, 'I had a boarded summer before last—that lady from Louisville, an' she wanted them candlesticks the worst kind, an' offered me fifteen dollars for 'em. I wouldn't part with 'em then, but she said if ever I wanted to sell 'em, to let her know, an' she left her name an' address on a cyard. I went to the big Bible an' got out the cyard, an' I packed the candlesticks in the cyarpetbag, an' put on my bonnet. When I opened the door I looked up the road, an' the first thing I saw was Dave Crawford comin' along in his new buggy. I went out to the gate an' he drew up an' asked me if I was goin' to town, an' said he'd take me. It looked like the Lord was leadin' me all the time,' says she, 'but the way things turned out it must 'a' been Satan. I got to Mary just two hours before she died, an' she looked up in my ace and says, "Mother, I knew God wouldn't let me die till I'd seen you once more."'"

Here Aunt Jane took off her glasses and wiped her eyes. "I can't tell this without cryin' to save my life," said she; "but 'Lizabeth never shed a tear. She looked like she'd got past cryin' and she talked straight on as if she'd made up her mind to say jest so much, an she'd die if she didn't get to say it. Well.

"'As soon as the funeral was over,' says she, 'I set out to find the lady that wanted the candlesticks. She wasn't at home, but her niece was there, an' said she'd heard her aunt speak of the candlesticks often; and she'd be home in a few days and would send me the money right off. I come home thinkin' it was all right, an' I kept expectin' the money every day, but it never come till day before yesterday. I wrote three times about it, but I never got a word from her, till Monday. She had jest got home, she said, and hoped I hadn't been inconvenienced by the delay. She wrote a nice, polite letter and sent a cheque for fifteen dollars, and here it is. I wanted to confess it all that day at the Mite Society, but somehow I couldn't till I had the money right in my hand to pay back. If the lady had only come back when her niece said she was comin', it would all have turned out right, but I reckon it's a judgment on me for meddling with the Lord's money. God only knows what I've suffered,' says she, 'but if I had it to do over again, I believe I'd do it. Mary was all the child I had in the world, and I had to see her once more before she died. I've been a member of this church for twenty years,' says she, 'but I reckon you'll have to turn me out now.'

"The pore thing stood there tremblin' an' holdin' out the cheque as if she expected somebody to come and take it. Old Silas Petty was glowerin' at her from under his eyebrows, and it put me in mind of the Pharisees and the woman they wanted to stone, and I ricollect thinkin', 'O if the Lord Jesus would jest come in and take her part!' And while we all set there like a passel o' mutes, Sally Ann got up and marched down the middle aisle and stood right by 'Lizabeth. You know what funny thoughts people will have sometimes.

"Well, I felt so relieved. It popped into my head all at once that we didn't need the Lord after all. Sally Ann would do jest as well. It seemed sort o' like sacrilege, but I couldn't help it.

"Well, Sally Ann looked all around as composed as you please and says she, 'I reckon if anybody's turned out o' this church on account o' that miserable little money, it'll be Jacob and not 'Lizabeth. A man that won't give his wife money to go to her dyin' child is too mean to stay in a Christian church anyhow; and things is come to a pretty pass in this state when a woman that had eight hundred dollars when she married has to go to her husband and git down on her knees an beg for what's her own. Where's that money 'Lizabeth had when she married you?' says she, turnin' round and lookin' Jacob in the face. 'Down in that ten-acre medder lot, ain't it?—an' in that new barn

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you built last spring. A pretty elder you are, ain't you? Elders don't seem to have improved much since Susannah's times. If there ain't one sort o' meanness in 'em it's another,' says she. Goodness knows what she would 'a' aid, but jest here old Deacon Petty rose up. And says he, 'Brethern'—and he spread his arms out and waved 'em up and down like he was goin' to pray—'brether, this is awful! If this woman wants to give her religious experience, why,' says he, very kind and condescendin', 'of course she can do so. But when it comes to a woman standin' up in the house of the Lord and revilin' an elder as this woman is doin', why, I tremble,' says he, 'for the church of Christ. For don't the Apostle Paul say, "Let your women keep silence in the church"?'

"As soon as he named the 'Postle Paul, Sally Ann give a kind of snort. Sally Ann was turrible free-spoken, and I've heard her say many a time that she had as little use for the 'Postle Paul as she had for Judas Iscariot. And when Deacon Petty said that, she jest squared herself like she intended to stand there till jedgment day, and says she, 'The 'Postle Paul has been dead ruther too long for me to be afraid of him. And I never heard of him app'intin' Deacon Petty to represent him in this church. If the 'Postle Paul don't like what I'm sayin', let him rise up from his grave in Corinthians or Ephesians, or wherever he's buried, and say so. I've got a message from the Lord to the men-folks of this church, and I'm goin' to deliver it. Paul or no Paul,' says she. 'And as for you, Silas Petty, I ain't forgot the time I dropped in to see Maria one Saturday night and found her washin' out her flannel petticoat an' dryin' it before the fire. And every time I've had to hear you lead in prayer since then I've said to myself, "Lord, how high can a man's prayers rise toward heaven when his wife ain't got but one flannel skirts to her name? No higher than the back of his pew, if you'll let me tell it." I knew jest how it was,' said Sally Ann, 'as well as if Maria 'd told me. She'd been havin' the milk and butter money from the old roan cow she'd raised from a little heifer, and jest because feed was scarce, you'd sold her off before Maria had money enough to buy her winter flannels. I can give my experience, can I? Well, that's jest what I'm a-doin',' says she; 'an' while I'm about it,' says she, 'I'll give in some experience for 'Lizabeth an' Maria an' the rest of the women who betwixt their husbands an' the 'Postle Paul have about lost all the gumption and grit that the Lord started them out with. If the 'Postle Paul,' says she, 'has got anything to say about a woman workin' like a slave for twenty-five years an' then havin' to set up an' wash out her clothes Saturday night so's she can go to church clean Sunday mornin', I'd like to hear it. But don't you dare to say nothin' to me about keepin' silence in the church. There was times when Paul says he didn't know whether he had the spirit of God or not, an' I'm certain that when he wrote that text he wasn't no more inspired than you are, Silas Petty, when you tell Maria to shut her mouth.'

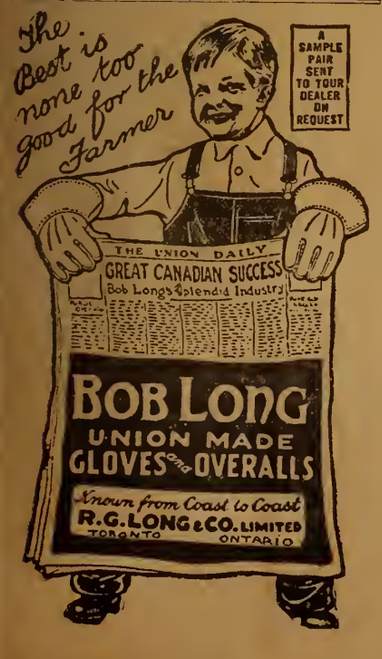
"Job Taylor was settin' right in front of Deacon Petty, an' I reckon he thought his time was comin' next; so he gets up easy-like with his red bandana to his mouth, an' starts out. But Sally headed him off before he'd gone six steps, an' says she, 'There ain't nothin' the matter with you, Job Taylor; you set right own an' hear what I've got to say. I've knelt an' stood through enough o' your long-winded prayers, an' now it's my time to talk an' yours to listen.'

"An' bless your life, if Job didn't set down as meek as Moses, an' Sally Ann lit right into him. An' says she, 'I reckon you're afraid I'll tell some o' your meanness, ain't you? An' the only thing that stands in my way is that there's so much to tell I don't know where to begin. There ain't a woman in this church,' says she, 'that don't know how Marthy scrimped and worked and saved to buy her a new set o' furniture, an' how you took the money with you when you went to Cincinnati the spring before she died, an' come back without the furniture. An' when she asked you for the money, you told her that she and everything she had belonged to you, and that your mother's old furniture was good enough for anybody. It's my belief,' says she, 'that's what killed Marthy. Women are dyin' every day an' the doctors will tell you it's some new-fangled disease or other, when, if the truth was known, it's nothin' but wantin' somethin' they can't get, an' hopin' an' waitin' for somethin' that never comes. I've watched 'em an' I know. The night before Marthy died she says to me, "Sally Ann," sasy she, "I could die a heap peacefuller if I jest knew the front room was fixed up right with a new set of furniture for the funeral." ' An' Sally Ann p'inted her finger right at Job an' says she, 'I said then an' I say it now to your face, Job Taylor, you killed Marthy the same as if you'd taken her by the throat and choked the life out of her.'

"Mary Embry, Job's sister-in-law, was settin' right behind me, an' I heard her say 'Amen!' as fervent as if somebody had been prayin'. Job set there lookin' like a sheep-killin' dog, an' Sally Ann went right on.

"'I know,' says she, 'the law gives you the right to think they've got down to the clothes on their backs; an' I've always said there was some Kentucky law that was made for the express purpose of encouragin' men in their natural meanness—a p'int in which, the Lord knows they don't need no encouragin'. There's some men,' says she, 'that'll sneak behind the 'Postle Paul when they're plannin' any meanness against their wives, an' some that runs to the law, an' you're one of the law kind. But mark my words,' says she, 'one of these days you men who've been stealin' your wives' property an' defraudin' 'em, an' cheatin' 'em out of their just dues, you'll have to stand before a judge that cares mighty little for Kentucky law; an' all the law and scripture you can bring up won't save you from goin' where the rich man went.'

"I can see Sally Ann right now," and Aunt Jane pushed her glasses up on her forehead and looked with a dreamy, retrospective gaze through the oorway and beyond, where swaying elms and maples were whispering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softly to each other as the breeze touched them. "She had on her old black poke-bonnet and some black yarn mitts, an' she didn't come nigh up to Job's shoulder, but Job set an' listened as if he jest had to. I heard Dave Crawford shufflin' his feet an' clearin' his throat while Sally Ann was talkin' to Job. Dave's farm j'ined Sally Ann's, an' they had a lawsuit once about the way a fence ought to run, an' Sally Ann beat him. He always despised Sally Ann after that, an' used to call her a 'he-woman.' Sally Ann heard the shufflin', an' as soon as she got through with Job she turned round to Dave, an' says she: 'Do you think your hemmin' an' scrapin' is goin' to stop me, Dave Crawford? You're one o' the men that makes me think that it's better to be a Kentucky horse than a Kentucky woman. Many's the time,' says she, 'I've seen pore July with her head tied up crawlin' around tryin' to cook for sixteen harvest hands, an' you out in the stable cossetin' up a sick mare an' rubbin' down your three-year-olds to get 'em in trim for the fair. Of all the things that's hard to understand,' says she, 'the hardest is a man that has more mercy on his hore than he has on his wife. July's found rest at last,' says she, 'out in the graveyard; an' every time I pass your house I thank the Lord you've got to pay a good price for your cookin' now, as there ain't a woman in the country fool enough to step into July's shoes.'

"But, la!" said Aunt Jane, breaking off with her happy laught—the laugh of one who revels in rich memories—"what's the use of me tellin' all this stuff? The long and the short of it is that Sally Ann had her say about nearly every man in the church. She told how Mary Embry had to cut up her weddin' skirts to make clothes for her first baby; an' how John Martin stopped Hannah one day when she was carryin her mother a pound of butter, an' made her go back an' put the butter down in the cellar; an' how Lije Davidson used to make Ann pay him for every bit of chicken feed, an' then take half the egg money because the chickens got into his garden, an' how Abner Page give his wife twenty-five cents for spendin' money the time she went to visit her sister.

"Sally Ann always was a masterful ort of woman, an' that night it seemed like she was possessed. The way she talked made me think of the day of Pentecost, an' the gift of tongues. An' finally she got to the minister. I'd been wonderin' all along if she was goin' to let him off. She turned around to where he was settin' under the pulpit an' says she, 'Brother Page, you're a good man, but you ain't so good you couldn't be better. It was jest last week,' says she, "that the women come around beggin' money to buy you a new suti of clothes to go to Presbytery in; an' I told 'em if it was to get Mrs. Page a new dress, I was ready to give; but not a dime was I goin' to give towards puttin' finery on a man's back. I'm tired o' seein' the ministers walk up into the pulpit in their slick black broadcloths, an' their wives sittin' down in the pew in an old black silk that's been turned upsde down, wrong side out an' hind part before, an' sponged an' pressed an' made over till you can't tell whether it's silk or calliker or what.'

"Well, I reckon there was some o' the women that expected the roof to fall down on us when Sally Ann said that right to the minister. But it didn't fall, an' Sally Ann went straight on. 'An' when it comes to the perseverance of the saints an' the decrees of God,' says she, 'there ain't many can preach a better sermon; but there's some of your sermans,' says she, 'that ain't fit for nothin' but kindlin' fires. There's that one you preached last Sunday on the twenty-fourth verse of the fifth chapter of Ephesians. I reckon I've heard about a hundred an' fifty sermons on that text, an' I reckon I'll keep on hearin' 'em as long as there ain't nobody but men to do the preachin'. Anybody would think,' says she, 'that you preachers was struck blind every time you git through with the twenty-fourth verse, for I never heard a sermon on the twenty-fifth verse. I believe there's men in this church that thinks the fifth chapter of Ephesians hasn't got but twenty-four verses, an' I'm going to read the rest of it to 'em for once anyhow.'

"An' if Sally An didn't walk right up into the pulpit same as if she'd been ordained, an' read what Paul said about men lovin' their wives as Christ loved the church, an' as they loved their own bodies.

"'Now,' says she, 'if Brother Page can reconcile these texts with what Paul says about women submittin' an' bein' subject, he's welcome to do it. But,' says she, 'if I had the preachin' to do, I wouldn't waste no time reconcilin'. I'd jest say that when Paul told women to be subject to their husbands in everything, he wasn't inspired; an' when he told men to love their wives as they loved their own bodies, he was inspired; an' I'd like to see the Presbytery that could silence me from preachin' as long as I wanted to preach. As for turnin' out o' the church,' says she, 'I'd like to know who's to do the turnin' out. When the disciples brought that woman to Christ there wasn't a man in the crowd fit to cast a stone at her; an' if there's any man nowadays good enough to set in judgment on a woman, his name ain't on the rolls of Goshen Church. If 'Lizabeth,' says she, 'had as much common sense as she's got conscience, she'd know that the matter o' that money didn't concern nobody but our Mite Society, an' we women can settle it without any help from you deacons and elders."

"Well, I reckon Parson Page thought if he didn't head Sally Ann off some way or other she'd go on all night; so when she kind o' stopped for breath and shut up the big Bible, he grabbed a hymn-book an' says,

"'Let us sing, "Blest Be the Tie That Binds."'

"He struck up the tune himself; an' about the middle of the first verse Mis' Page got up an' went over to where 'Lizabeth was standin', an' give her the right hand of fellowship, an' then Mis' Petty did the same; an' first thing we knew we was all around her shakin' hands an' huggin' her an' cryin' over her. 'Twas a reg'lar love-feast; and we went home feelin' like we'd been through a big protracted meetin' and got religion over again.

"'Twasn't more'n a week till 'Lizabeth was down with slow fever—nervous collapse, old Doctor Pendleton called it. We took turns nussin' her, and one day she looked up in my face and says, 'Jane, I know now what the mercy of the Lord is.'"

Here Aunt Jane paused and began to cut three-cornered pieces out of a time-stained square of flowered chintz. The quilt was to be of the wild-goose pattern. There was a drowsy hum from the beehive near the window, and the shadows were lengthening as sunset aprpoached.

"One queer thing about it," she resumed, "was that while Sally Ann was talkin', not one of us felt like laughin'. We set there as solemn as if parson was preachin' to us on 'lection and predestination. But whenever I think about it now, I laugh fit to kill. And I've thought many a time that Sally Ann's plain talk to them men done more good than all the sermons us women had preached to us about bein' 'shamefaced' and 'submittin'' ourselves to our husbands, for every one o' them women came out in new clothes that spring, an' such a change as it made in some of 'em. I wouldn't be surprised if she did have a message to deliver, jest as she said. The Bible says an ass spoke up once an' reprov-a man, an' I reckon if an ass can reprove a man, so can a woman. An' it looks to me like men stand in need of reprovin' now as they did in Balaam's days."

"How about you and Uncle Abram?" I suggested. "Didn't Sally Ann say anything about you in her experience?"

Aunt Jane's black eyes snapped with some of the fire of her long-past youth. "La!, no, child," she said. "Abram never was that kind of a man, an' I never was that kind of a woman. I ricollect as we was walkin' home that night Abram says, sort of humble-like: 'Jane, hadn't you better git that brown merina you was lookin' at last County Court day?'

"An' I says, 'Don't worry about that brown merino, Abram. It's a-lyin' in my bottom drawer right now. I told the storekeeper to cut it off jest as soon as your back was turned, and Mis' Simpson is goin' to make it next week.' And Abram he jest laughed and says, 'Well, Jane, I never saw your beat.' You see, I never was no hand at 'submittin'' myself to my husband like some women. I've often wondered if Abram wouldn't 'a' been jest like Silas Petty, if I'd been like Maria. I've noticed that whenever a woman's willin' to be imposed upon, there's always a man standin' 'round ready to do the imposin'. I never went to no lawbook to find out what my rights was. I did my duty faithful to Abram, and when I wanted anything I went and got it, and Abram paid for it, and I can't see but what we got on jest as well as we'd 'a' done if I'd a-'submitted' myself."

Longer and longer gre wthe shad-

RHEUMATISM

Needs Strong Medicine Decided Syracuse Man Who Suffered 36 Years Before, At Last He Found A Cure.

WILL SEND FREE TO ALL WHO SUFFER

"You can't cure Rheumatism with linaments, cheap uric acid solvents, starving, sweating or dosing your stomach with drugs that either ruin the digestion or are so weak they do little more than scratch the surface of the disease," says F. H. Delano, of Syracuse, N. Y. Rheumatism is deep-seated, hard to shake off for good as everyone who suffers from it knows, and it needs medicine which, while harmless to the stomach is strong enough to take right hold to do any permanent good.

Mr. Delano, who suffered from all the torturing, twisting pains of rheumatism for 36 years, found at last, a strong but harmless medicine compound that cured him. As he took it, all those years of accumulated soreness, pain and stiffness just seemed to melt away and vanish. THIS REMEDY IS WORTH TRYING. If you suffer from rheumatism, let Mr. F. H. Delano send you a generous package of his great mecicine FREE. Don't send any money. He wants to give a package free to every one who needs it. Don't suffer another day from rheumatism if this package will end it, but write at once to F. H. Delano, 787B. Syracuse, N. Y., and get your package right away because of the great expense, not more than one free package can be sent to an address.

Tuesday, Sept. 4th

is the day on which classes will be resumed at

Fredericton Business College

Write for information as to our courses of study.

We must have a large number of graduates next year to supply the great demand for office help.

Address :

W. J. OSBORNE, Prin.

FREDERICTON, - - N. B.

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Drive and demonstrate the Bush Car. Pay for it out of your commissions on sales. My agents are making money. Shipments are prompt.

Bush Cars guaranteed or money back. 1918 models ready. Write at once for my 48-page catalog and all particulars. Address J. H. Bush, Pres. Dept. 12 HT

BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

Pain in Shoulders

PAIN IN HEAD

LIVER BOTHERED HER.

Miss A. Windsor, Peterboro, Ont., writes:—"I have been sick for about four years with pains in my head and pains in my shoulders which I always thought were caused by working outside in the sun on the farm.

People told me that it was my liver bothering me, so I bought three vials of Milburn's Laxa-Liver Pills, and found that they were doing me good. I continued taking them until now I am well and strong. I am very thankful to you for my recovery."

Milburn's Laxa-Liver Pills are a specific for all troubles arising from a morbid state of the liver, so keep it active by the use of these easy-acting, non-irritating little pills.

Milburn's Laxa-Liver Pills are 25c. a vial at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of somethiug evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that llfe is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

Read My FREE Offer:

To Mothers of Daughters, I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten days trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS, Box 309 Windsor, Ontario

ows, and the faint tinkle of bell's came in through the winows. The cows were beginning to come home. The spell of Aunt Jane's dramatic art was upon me. I began to feel that my own personality had somehow slipped away from me, and those dead pepole, evoked from their graves by an old woman's histrionism, seemed more real to me than my living, breathing self.

like wfll 5d w:qy- 'Sq li 1?

"There now, I've talked you clean to death," she said, with a happy laugh as I rose to go. "But we've had a real nice time and I'm glad you come."

The sun was almost down as I walked slowly away. When I looked back at the turn of the road, Aunt Jane was standing on the doorstep shading her eyes and peering across the level fields. I knew what it meant. Beyond the fields was a bit of woodland, and in one corner of that you might, if your eyesight was good, discern here and there a glimpse of white. It was the old burying ground of Goshen Church; and I knew by the strained attitude and intent gaze of the watcher in the door that somewhere in the sunlit space between Aunt Jane's doorstep and the little country graveyard, the souls of the living and the dead were keeping a silent tryst.

A TIME-SAVING SEWING HINT

When sewing lony seams use wire paper clips to fasten the edges of the cloth together and no basting will be necessary. Turn up a hem the desired depth and place the fasteners at the bottom edge to hold it in place.

In mabing a buttonhole in serge, the material often frays badly at the out edge. To avoid this make a mark to show the exact size and position of the hole by means of a tacking thread. Then stitch around this tacking thread with the machine. Now you are ready to cut the hole between the stitching and to work the buttonhole over the machine stitching.

When blouses for the boys are bought ready made, it is a good plan to cut off the narrow hem, sew on a narrow belt that just fits around the waist and finish with button and buttonhole. It saves much time in putting in strings.

MEAT LOAF

Butter a long, narrow cake tin and line it with cold mashed potatoes, smoothing it down with a spoon into layers about one-inch thick. Inside this put a filling of roast beef or any other meat, chopped rather coarsely, seasoned with salt and pepper and a few drops of onion juice if desired; moisten with gravy. Smooth this filling till one inch from the top and cover with mashed potatoes. Bake in a hot over for half hour and turn out on a platter. It will look like a crusted loaf and may be cut in neat slices. This makes a delicious supper dish.

HOMEMADE FURNITURE POLISH

An excellent homemade polish especially good for mahoyany furniture is made by mixing three tablespoonfuls of olive oil with one of vinegar. Apply with a piece of flannel, and polish with a dry flannel.

How the Vicious Circle of Neurasthenia is Formed

WHEN the nerves are overstrained by mental exertion, by accident or by shock the irritation makes rest or sleep impossible, and consequently there is no restoration of the wasted nerve force.

In its turn digestion fails, because there is lack of nervous energy to control the flow of gastric juices in the stomach and to operate the other organs of digestion.

Failing to obtain the necessary nourishment, the blood becomes thin and watery, and as a result the nerves are further starved and rendered less capable of standing the strain put upon them.

In this way is formed the vicious circle of neurasthenia or nervous prostration, and there is no magical way in which the circle may be broken up.

Overstrained Nerves, Loss of Sleep, Indigestion

The Food Cure

Mrs. George Ross, Augusta street, Cornwall, Ont., writes: "Some two years ago I was attacked with neurasthenia, or nervous prostration. I doctored with different doctors without any good results, and even took a trip to a distant city to see if I could not recuperate. But upon returning I found I was no better — in fact, I kept getting worse all the time. I had no appetite, could not sleep, and had to be helped up and down stairs. I also had terrible headaches. One day a book was left at the door telling about Dr. Chase's Nerve Food, and I decided to try it. My folks derided the idea, but I went ahead and secured a box, and before finishing that first box I could see that I was getting better. You may be sure I was delighted to find a remedy that would give me relief. I continued taking them, and recovered so thoroughly that I was able to help with the housecleaning that spring. During my nervous collapse I had failed from 115 pounds to 90, and since my recovery have weighed as much as 110 pounds. I still keep Dr. Chase's Nerve Food in the house, and use them when I feel the need of them. I have recommended them to a great many people around Cornwall, as I feel that I cannot speak too highly of them."

The nerve cells are starved and must have nourishment. The blood fails to supply this want, so you must give to the blood in condensed and easily assimilated form the elements from which Nature forms new blood and new nervous energy.

This is exactly what Dr. Chase's Nerve Food does, and it does it so well that no treatment for the nerves has ever met with the enormous success of this great food cure.

You can scarcely take up a newspaper without reading of someone who has been restored to health and vigor and happiness by means of this reconstructive treatment. This is Nature's way of effecting cure, and is, therefore, both certain and lasting. A little patience is required, but once the building-up processs is under way you will find daily evidence that you are regaining health and the joy of living.

Dr. Chase's Nerve Food

50 cents a box, a full treatment of 6 boxes for $2.75, at all dealers, or Edmanson, Bates & Co., Limited, Toronto. Do not be talked into accepting a substitute. Imitations only disappoint.

MY TASK.

By Florence Jones Hadley.

A homekeeper? Ah, yes, dear heart, and more.
Keeper of hearts for those love gave to me,
Upholding weary hands that else might fail,
Smoothing a little head upon my knee.

A homekeeper am I—this is my task:
To make one little spot all snug and warm,
Where those, so bruised and beaten by the day,
May find a refuge from the night and storm.

Gladly I serve—love makes the serving sweet,
A happy keeper, I, of home and hearts,
Serving, I reign, a queen by love's own right.

PUNCTUALITY

Written by Miss Celia Peck, of Hopewell Hill, N. B. Read at the Fifth Annual Convention, N. B. W. I.

Emerson says, "a beautiful behavior is better than a beautiful form, it gives a higher pleasure than statues or pictures, it is the finest of the fine arts."

Perfection in all things should be the aim of every member of the Women's Institute and the first step towards that goal in Punctuality.

What does Punctuality mean?—The characteristic of keeping the exact time of an appointment or engagement. Punctuality represents a great many things, but I will only mention a few. It represents, "Truthfulness, Faith, Orderliness, Consideration of others," and what are these but the essentials of life?

You will say Truthfulness? Where does Faith come in? Why Orderliness? How "Consideration of others?" Truthfulness—Do you not promise to keep an appointment and we as Canadians must ever be known as a people who keep their word.

Faith—You are expected to be there at such and such a time.

Orderliness—Have you not heard since childhood "Order is Heaven's first law" and whoever said it should have added "And Punctuality is its twin sister," for do they not go hand in hand? Did you ever see an untidy, careless person ever on time anywhere? Always at the last minute there is a scramble for mislaid wraps, etc., with the resultant loss of time.

If to interrupt another while speaking is the height of bad manners, then Punctuality at all gatherings is the very essence of good breeding. Do we not all know the people who invariably arrive at church and other assemblages long after everyone else is seated? Occasionally this may be unavoidable, but when it becomes a habit, it gets past forbearance and a great source of annoyance to those who do not wish to be interrupted, either in speaking or listening.

Punctuality is the keystone in the arch of success. It represents ambition and again you may say "how?" Did you ever see a boy or girl make a success of anything unless they were ambitious, keeping every appointment or engagement promptly and grasping every opportunity for advancement keenly? What sort of a store, bank, factory, etc., would it be if the clerks sauntered in whenever it pleased them?

What is the first requisite of a soldier, of a good servant or official in any capacity, of a railway system? Is it not Punctuality?

Punctuality is the greatest factor in the household. Each day has to be started with it else the multitudinous duties overlap and confusion results. Back of all and first of all is the Mother in the home; the early training is wat counts. We know the lessons taught then, abide with us throughout all our after life.

Think of the wonderful influence we women of the 92 Institutes in New Brunswick can exert just in this matter of Punctuality. The day for slackers in every branch of life is over—let us as women see to it there are no more laggards.

Let us all when we return to our homes (or better still, now,) be resolved never to be late anywhere and impress it upon those over whom we have control the necessity of consideration for others in this respect and so cultivate habits that represent the finest of the fine arts—a beautiful behavior.

WAR TIME PRAYER

Prepared especially for the Women's Institute

Almighty God, our Heavenly Father, who hast permitted us to live in the most wonderful time in the history of all ages, we thank Thee that Thou hast chosen our Nation to play a leading part in the great struggle. Bless, we pray Thee, our brothers and friends, as they fight for the protection of the weak, for the rights of the common people, and for the overthrow of injustice and cruelty. May each one of us in some humble way, be a helper in the great task confronting our Empire and our Dominion. May we allow no petty grievance or trivial annoyance to distract us from the nobler and higher duties of the hour. May we have strength for the daily task. May we have courage to meet and overcome every difficulty. May we keep a cheerful heart and a smiling face through all our troubles. May we not grow weary in well-doing. May we bear one another's burdens and fulfill the law of Christ. We beseech Thee to bless all Christian agencies designed to soften the horrors of war. Hasten the coming of the golden dawn of peace, O Thou blessed Prince of Peace. For Thine own name's sake. Amen.

USES FOR OLD CLOTHES

Under Clothing—Muslin Combination Suits—1. Add new top or bottom part according to need. 2. Cut down for child's suit. 3. Save trimming an buttons and combine with new material.

Stockings—Cotton, (black and white)—1. Dustless dust clothes. 2. Dustless dust mops. (To make: rip stocking up the back and cut in neat oblong. Sew several of these together, hem, and dip in paraffine oil.) 3. Rug rags. 4. Sleeve protectors for garden use.

Silk—1. Make the best clothes for polishing furniture. 2. Can be cut over into children's stockings. They are especially good for half socks.

Nightgowns.—1. Make splendid covers for light dresses which may soil just hanging in colset.

Suits—1. Make into one-piece dress. 2. Combine with new or contrasting material to make presentable suit.

Coats. Rain coats—1. Use for swimming bags. 2. Rain-proof hats.

RELIEF AT LAST

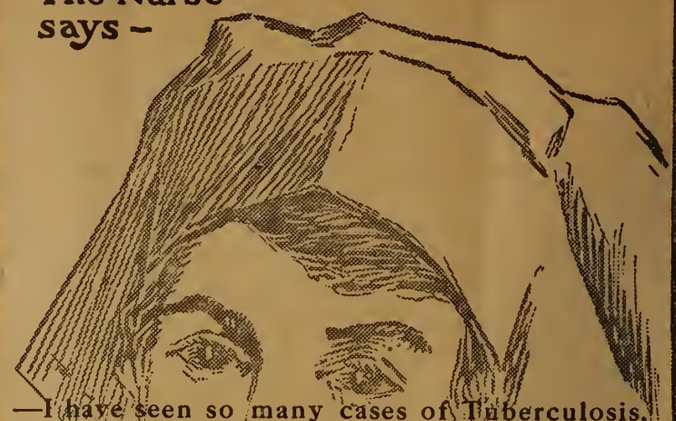
I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309
Windsor, Ont.

The Nurse says –



—I have seen so many cases of Tuberculosis, extreme nervousness, Anæmia, La Grippe and general debility helped by WILSON'S INVALIDS' PORT that I have come to regard it as indispensable for the proper treatment of all wasting diseases and convalescent cases.

—and not only for these cases, but for persons whose vitality is low or impaired, or who are particularly susceptible to the ills of Winter. Incipient colds, irritating coughs or that "fagged-out" feeling that presages a serious illness, are quickly dispelled by the regular and continued use of WILSON'S INVALIDS' PORT for a short period.

Dr. H W. Brant, the distinguished Physician, says:
"In a number of cases I have prescribed your Wilson's Invalids' Port, and have found it entirely satisfactory in every case where used, being pleasant in taste and sustaining in its action."

H W Brant M.D.

Wilson's INVALIDS' PORT
(à la Quina du Pérou)

Absolutely no Alcohol is Added.

BIG BOTTLE :: ASK YOUR DOCTOR :: ALL DRUGGISTS

FUR BOOK FREE

Shows the Latest Styles for the Season

Buy by Mail

Would you know the trend of fashion for the season? Then you need a copy of our wonderful Fur Book. This book is replete with illustrations of the exquisite fur styles created by the leading fashion dictators of furdom. It shows exactly what will be worn by the best dressed women on the Boulevarde in Paris and on Fifth Avenne, New York. Illustrations and descriptions both will aid you in making an appropriate choice of furs for this season. Get a copy of this book at once. Don't arrive at any decisions about furs until you have seen it. We will mail you a free copy as soon as your request reaches us.

Bargains Like These on Every Page

390—Ladies' Fur-Lined Coat, semi-fitting skirt: large storm collar of best quality sable; lined with full-furred Canadian muskrat skins; 38 in. long; strapping; pockets and cuffs; 50 in. long **$75.00**

678—Persian Lamb Paw Stole, wide over sboulders; deep back and fronts to points, finisbed witb two ornaments; good quality linings **$6.00**

676—Persian Lamb Paw Muff, new mel; on or ball shape; soft silk shirred ends eiderdown bed; silk wrist cord..... **$5.00**

344—Isabella Browu Fox Neckpiece, full animal style; finished with head, tail and paws; fastens in front; smart neat neckpiece..... **$25.00**

1660—Marmot Neckpiece, made to slip through tab of self fur; pointed and square ends; made from best quality skins..... **$12.50**

If any one of the articles featured is what you need send us ycur order at once and it will receive our prompt attention.

Seller-Gough Fur Company Limited
244-M Yonge St., Toronto

You Save Money

METALLIC
WRITE FOR PRICES
METALLIC ROOFING Co.
LIMITED
TORONTO, CANADA.
CEILING

3. Sleeping porch screens. 4. Sleeping porch bed covers.

Cloth Top Coats—Children's clothes (coat or trousers.-

Waists, Cotton—1. Sunbonnets. 2. Guimpes for children's dresses. 3. Covers for kitchen holders.

Shoes, Colored.—Dyed black, soled, and heels straightened.

Bed Clothes, Sheets—1. If worn in center cut in two and turn edges to centor. 2. Make into smaller sheets for baby bed or narrow cot. 3. Use for pillow cases. 4. Make clothes protector sacks. 5. Dye an attractive color and use for bed room curtains. 6. Save for rug rags, cleaning cloths, or bandages.

Pillow Cases—1. Make into baby's pillows. 2. Make into laundry bags. 3. Same as No. 6 under sheets.

Quilts—1. Make into pads for top of mattress by adding washable cover. 2. Window seat pads.

Blankets—If all wool they may be sent back to the factory and for a small sum they will be recarded, respun and rewoven into new blankets.

Towels, Turkish—1. Wash cloths. 2. Bath mits, or bath bags. 3. Hot water bag covers.

Linen or Huck—Squares for dish cloths.

Table Cloths, Linen.—1. Made into napkins or lunch cloths. 2. Sterilize and use for bandages.

The above information was taken from Circular 91, Extension Service of the College of Agriculture The University of Wisconsin, September, 1917.

OARK RED BEET A GOOD CANNER

Because of its splendid color the dark red beet is best for canning although those having red and white layers may be canned for home use successfully and, aside from appearance, are as desirable for eating purposes.

All beets will fade somewhat during canning, but if properly done there will be little loss of color and most of this will return in a few days. Older beets will fade more than those which are young and tender. There will be lsss loss of color when the beets are canned whole. Fading has little or no effect upon the quality of the canned beet, but detracts from its appearance.

A much more satisfactory pack may be secured if the beets are graded into three or four sizes. Young, tender beets an inch in diameter, what are known as rosebud beets, are the best, while those between one and two inches in diameter may b canned whole with good results. Larger beets should be sliced or quartered in order to use all the space in the jars.

After the beets are pulled the tops should be cut off leaving about an inch of the stem. Do not remove the tails until the beets are ready to pack in the jars. Wash thoroughly. Soaking in water will not remove all the dirt, as may be ascertained by wiping with a clean, white cloth. Blanch in boiling water for about five minutes or until the skin is loosened. Plunge for a moment into cold water and remove the skins by scraping rather than cutting. Cut off the tails and the balance of the stem, being careful not to cut into the beet itself.

Pack the beets in the jar, add boiling water and a level teaspoonful of salt per quart, put rubbers in position and partially tighten the tops to the jars. Sterilize in a hot-water canner for ninety minutes, in a water-seal canner for seventy-five minutes, in a steam-pressure canner for sixty minutes, or in a pressure cooker for thirty-five minutes. Remove from the canning outfit and tighten covers. Beets should be stored in a dark place to prevent bleaching. When canning in tin, lacquered or enameled cans should be used.

ANIMATION

When a face lacks animation, it lacks beauty, even though every feature be regular and perfect in shape. And a face that has several defects, can still be pretty, if it shows vivaof letters from young girls, asking how they can acquire this desired animation of expression—just as though they wouldn't know themselves, if they only stopped to think about it!

Animation can be forced, even if you do not feel lively and interested at the time. One can always smile—and a smile brings the warm touch of animations to the countenance. And a forced smile is usually the forerunner of a real one. A smile lends sweetness to the face.

If you are animated, yiur eyes are wide and expressive. This alone doubles the beauty of the face. The lips smile, and curve upward at the corners, which gives the most beautiful expression possible to the miuth. The cheeks curve with the smile—smile at yourself in the mirror, and you'll see what I mean—and usually, a bit of color comes into them.

The best way to have an animated expression, I always answer when asked, is to become very much interested in the other person. You may secretly think he or she is very stupid but if you look deep enough, you will find some one thing that will certainly interest you. And such feelings are reciprical. The more you are interested in the other person, the more he or she will be interested in you. Right there is the secret of popularity.

GOOD WAIST AND SKIRT HANGERS.

A frequent annoyance in the summer camp or at old country houses is the row of common rusty nails in the clothes-closets instead of nice, white-painted or bronzed hooks, such as usually furnish the home wardrobes. The resulting rust-spots may be avoided by the use of permanent hangers. They are also convenient for home use, since one does not always care to arrange loops for hanging, especially on thin materials. Best of all, they are always on hand, and never out of order.

For these hangers, cut from the lower edge of worn-out corsets the tape-and-elastic suspenders, of which there are usually two or three sets in good condition. Cut them off so as to leave three or four inches of tape or elastic, and, lifting the slide, insert the cut end till it catches firmly under the teeth at the back, then fold the slide down again, and you have a good, firm loop that can be slipped safely over the roughest nail. Two of these should be provided for each skirt and ine for the back of the waist, or, if preferred, one for each under-arm seam, at the armhole. When the garment is to be hung up, the ever-ready hanger is waiting, and the patent padded clasp obviates all injury to the fabric.

RAISIN FRITTERS

This is an economical dish when somehting extra is needed. Scald two cupfuls of milk with a small piece of stick cinnamon. (Use a double boiler if convenient). Mix together one-half cupful of cornstarch, three tablespoonfuls of flour, and one-half teaspoonful of salt. Add gradually, while stirring constantly, one-fourth of a cupful of cold milk, then add mixture gradually to scalded milk and cook ten minutes, stirring constantly till mixture thickens. Add yolks of two eggs, one-half teaspoonful if vanilla and one-third of a cupful of raisins, (soaked for a few minutes in boiling water, seeded and chopped). Place in a pan, spread evenly and cool. Remove, cut into two inch squares, dip in crumbs, fry in deep fat, and drain on brown paper. Serve hot, with vanilla sauce.

Old Tea Looks All Right

Old tea and fresh tea, poor tea and good tea, all look alike. No wonder a woman often gets a bulk tea she doesn't like.

Red Rose Tea in the sealed package is always fresh, always good, always worth the price on the label.

Kept Good by the Sealed Package

644

TO CURE FEAR

A little boy who is extremely nervous feared to go into an uniccupied room or upstairs unless accompanied by some older member of the family. It was often convenient to have him do little errands about the house, so his mother procured a large ball of strong twine and suggested that they play a "telephone" game. Giving him the end of the string, she unwound it as he walked away into some other room, and when he was ready to return, rewound it. This proved interesting to the little boy, and he gradually lost his unfounded fear of being alone.

THE BABY'S SLEEP

During the first month of its life a baby needs twenty hours of sleep a day, and thereafter not less than sixteen hours a day up to the end of its first year. It should sleep alone in a crib or basket. A clothes basket with a simple mattress made of excelsior and covered with a heavy balnket makes a good substitute for a crib while the child is small.

The room in which the baby sleeps should be darkened and well ventilated, the windows being liwered from the top. If it cries an refuses to sleep under these condition, then it is time to olok for the cause, for it is pribably sick or overfed or maybe hungry.

All children should take a nap of from one to two hours in the middle of the day until they are six years old.

Croup

"I don't think there is a more anxious time for parents than when their children have croup. Without they are prepared with Chamberlain's Cough Remedy they must wait for the doctor and listen to the choking, metallic cough and watch their little one gasping for breath.

"Granny" Chamberlain

You know the great danger of croup is the formation of a false membrane in the larynx, and until this is expelled relief cannot be obtained, and the spasmodic choking continues. Give Chamberlain's Cough Remedy in frequent doses. It will loosen this membrane and cause the child to expel it by vomiting.

Chamberlain's Cough Remedy

is an absolutely safe and certain remedy for croup, and if given as soon as the child becomes hoarse, or even after the croupy cough appears, it will prevent the attack."

Yours for Health — Granny Chamberlain

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Equal Honor
Equal Representation
Under Unionist Government

"I have absolute confidence that the pledge of the Prime Minister will be carried out, and that the Union Government will be fifty-fifty. Already the War Council is constituted on a fifty-fifty basis."
Hon. N. W. Rowell, President of the Council.

OUR real political leaders of both parties have joined together for the winning of the war. Since Laurier prefers to cast in his lot with Bourassa, the result is upon his own head. Just as in the trenches Conservative and Liberal fight shoulder to shoulder against the common enemy, so in this election Union Government states its progress and asks your endorsement on the ballot paper.

If you believe Canada should throw her whole weight into the war, and that it will take the very best men she can muster to achieve this

Support Union Government

Union Government being composed of the representative men of both political parties, should be an evidence to the electorate that the present is a crisis in which all past party allegiance should be discarded and all patriots should join in endorsing the Union Government by no uncertain vote, stimulating these men still further to carry out the great work for which the Union was formed, to reinforce our soldiers at the front and prosecute Canada's participation in the war.

Don't Allow Yourself to be Fooled with Arguments About the Sins of the Old Conservative Government which is Dead

The Union Government is a new deal on a fifty-fifty Liberal and Conservative basis.
To talk about the misdeeds of the old Conservative Government is like threshing dead straw.

You can't quarrel with a dead man.

Don't get away from the real issue, which is WHETHER CANADA SHALL FIGHT OR RUN AWAY. Whether it shall follow the miserable and unpatriotic French Canadian lead, or whether it shall be true to British traditions.

UNIONIST PARTY PUBLICITY COMMITTEE

United Empire Loyalists

"Britain Called" and those sturdy Loyalists of the Empire united to give their bloood and treasure for the old Union Jack. When the Empire was in danger they forsook party strife, filled their powder horns and bullet pouches to the bursting point, shouldered their muskets and marched away to the seat of danger. And when the war was over, they gathered together what they could of their possessions, sacrificed the rest, and followed the flag to this Province. You who have sprung from the blood of such a heroic race

Unite Again for the Empire--- Britain Calls Again

You who are descendants of these other Empire Loyalists, will you not hearken to her cry as did your forefathers, will you not forget party and unite to answer the call from the Motherland? Your fighting boys took Courcellette, Vimy Ridge, and Passchendaele with your farewell cheer still ringing in their ears. They are calling to you now to come over and help them. Will you desert these noble lads?

Support Union Government

The Union Government was formed out of the men in the Liberal and Conservative ranks who believed that they should unite to win the war. If you believe that the winning of the war comes first, vote for the Union Government Candidates. If you believe in backing up the lads who are living in filth, bleeding and dying for you, support the Union Government Candidates. Laurier and Bourassa think we have done enough and favor deserting our boys. The Union Government has been created to back up our soldiers and see them through.

"Election means just one thing, you are either going to send men to back up the Canadians or you are not."

Hon. F. B. Carvell.

REPORT OF YARMOUTH AGRICULTURAL SOCIETY

The annual meeting of the Yarmouth County Agricultural Society was held in the Council Chamber on Saturday afternoon, Nov. 17th, E. X. Spinney, Esq., president, in the chair. Minutes of the previous annual meeting read and approved. The secretary's report and financial statement were read and after some discussion were adopted.

To the Officers and Members of the Yarmouth County Agricultural Society:

Gentlemen,—In making my annual report this year I feel that a short review of the past may be profitable to show to what extent we have made progress or whether we have made any.

Sixteen years ago I took over the management of the exhibition. We had then just finished paying off our debt on the building and found ourselves with our grounds surrounded by a rather dilapidated fence. Our stock was all tied to the fence and stakes driven in rows up and down the grounds. Our swine were shown in the carts and racks in which they were brought to the exhibition. Poultry was shown around the northwest fence in boxes or coops as the exhibitor pleased.

The exhibition was then opened at one o'clock and the stock taken from the grounds at 4 o'clock and the general exhibition closed at 9 o'clock in the evening. Now we have three days exhibition. We have closed stalls for about 100 horses and colts. We have comfortable sheds perfectly waterproof for all our stock and a nice little building for our stockmen to sleep and eat in and be near their stock. This stock yard is lighted by electricity.

We have fairly good poultry houses. These houses should be improved and will in a few years have to be rebuild in a more conspicuous place where we can have more light. And what is true of our plant is more especially true of our exhibits. Contrast the fine herds of pure-bred cattle on the grounds this year with 16 years ago. What must the verdict be? Also the splendid booths inside the building this year. We were also honored with a visit from Lieut.-Gov. Grant which no doubt added much to the interest of the exhibition. We think every fairminded person must admit that our exhibitions have been a success.

This year was no exception. After the exceptional off-year of 1917 from almost every standpoint, a late spring, cold and wet summer followed by an August gale unprecedented for half a century, and a number of very severe early frosts, we think our exhibition surprised the public and showed that we have some very successful farmers if they have a fair chance.

These things should encourage us to continue our efforts to educate especially our young men along agricultural lines and not to stop to listen to the croker that sees nothing but failure anywhere.

Special mention should be made of the Dominion exhibit in charge of Mr. Bligh. This no doubt was the best exhibit ever placed in our exhibition. An afternoon could have been well spent in studying this exhibit.

Also the exhibit sent by Prof. Saunders (Entomologist) from Annapolis. Some of these facts were startling, especially the difference given between sprayed potatoes and those not sprayed. There no doubt has been money nough lost this year in Yarmouth County to pay for several spraying outfits. Some organized effort should be made this winter so this great loss can be remedied before another summer.

Much could be said about the general exhibits suffice to say they were in many departments superior to previous years. The school exhibit was very much above the average and so well arranged that it was very attractive. There were some very fine booths; perhaps special mention may be made of the new ones constructed this year by R. H. Davis & Co. These make the building very attractive.

The financial statement shows a balance on the right side. Our sale of entry tickets were somewhat in advance of last year but our sale of space was less and our prizes awarded were larger which makes our balance about the same.

In conclusion we wish to thank all who assisted in making the exhibition a success. Especially the railways for their reasonable rates on their respective lines and for their special trains Wednesday and Thursday, which were so well patronized this year.

Respectfully submitte,
WM. CORNING, Sec'y.

The circular letter was received and read and ordered placed on fyle. A letter was read from Prof. Trueman of Truro, re brood sows and the secretary was ordered to reply asking for further information and suggesting he advertise in local papers. A letter was also read from the Maritime Farmer, re the co-operation system of buying feeds, etc. This was laid on the table. The following officers were appointed for the coming year:

President—E. K. Spinney, Esq.
Vice-Pres.—S. A. Cook.
Sec'y.-Treas.—Wm. Corning.
Directors—J. L. Lovitt, J. M. Porter, J. F. Palmer, John C. Corning, Walter Churchill.
Auditors—W. A. Godfrey, M. C. Wyman.

Resolved, the society hold an exhibition three days in 1918, dates to be fixed by the management.

After some discussion on the spraying of potatoes it was decided to appoint a committee to cooperate with the Farmers' Association in considering some organization in which some more effective work may be done. The committee appointed were Wallace Cook, John C. Corning, Walter Churchill. Dr. Webster made some remarks about the raising of heavy horses in the county, and was followed by several members, but no conclusions were carried out. Meeting adjourned after a pleasant session.—Yarmouth Light.

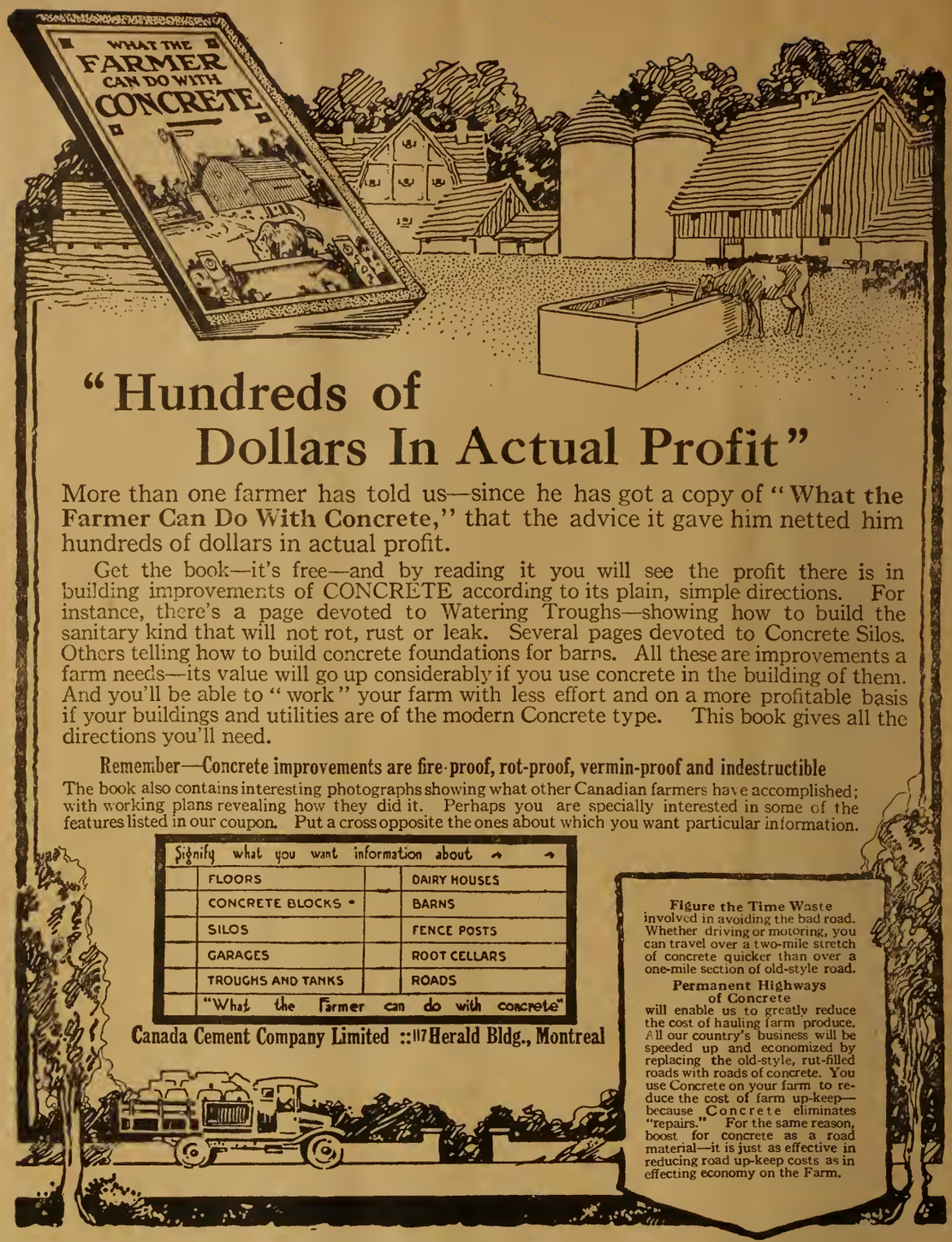
AN IMMINENT WAR TIME CONDITION

(Continued from page 133)

seed grain are urgently requested not to grind the grain, but reserve it for seed purposes and notify the Department immediately re the varieties and quantities they have for sale.

The foregoing paragraphs indicate the seriousness of the situation. It is a situation that demands concert-d action on the part of every farmer in the three provinces. The plan of campaign therein outlined is one that is workable, and one that has the approval of men who have given the situation their most careful attention. The farmers of the province and others who may read these paragraphs, are urgently requested to give the matter all the publicity they can. Our soldiers must have bread, and when the supply runs low they must have the first consideration, or calamity will surely fall upon us, and upon generations that are to follow.

Help to avoid a wide world calamity. Do not leave it to the other fellow. Do your part and having done so, strive to induce others to follow your example before sheer necessity, self preservation and the pangs of famine compel more drastic measures, and our children cry for bread when there is no bread.



"Hundreds of Dollars In Actual Profit"

More than one farmer has told us—since he has got a copy of "What the Farmer Can Do With Concrete," that the advice it gave him netted him hundreds of dollars in actual profit.

Get the book—it's free—and by reading it you will see the profit there is in building improvements of CONCRETE according to its plain, simple directions. For instance, there's a page devoted to Watering Troughs—showing how to build the sanitary kind that will not rot, rust or leak. Several pages devoted to Concrete Silos. Others telling how to build concrete foundations for barns. All these are improvements a farm needs—its value will go up considerably if you use concrete in the building of them. And you'll be able to "work" your farm with less effort and on a more profitable basis if your buildings and utilities are of the modern Concrete type. This book gives all the directions you'll need.

Remember—Concrete improvements are fire-proof, rot-proof, vermin-proof and indestructible

The book also contains interesting photographs showing what other Canadian farmers have accomplished; with working plans revealing how they did it. Perhaps you are specially interested in some of the features listed in our coupon. Put a cross opposite the ones about which you want particular information.

Signify what you want information about →			
	FLOORS		DAIRY HOUSES
	CONCRETE BLOCKS		BARNS
	SILOS		FENCE POSTS
	GARAGES		ROOT CELLARS
	TROUGHS AND TANKS		ROADS
	"What the Farmer can do with concrete"		

Canada Cement Company Limited ::117 Herald Bldg., Montreal

Figure the Time Waste involved in avoiding the bad road. Whether driving or motoring, you can travel over a two-mile stretch of concrete quicker than over a one-mile section of old-style road.

Permanent Highways of Concrete will enable us to greatly reduce the cost of hauling farm produce. All our country's business will be speeded up and economized by replacing the old-style, rut-filled roads with roads of concrete. You use Concrete on your farm to reduce the cost of farm up-keep—because Concrete eliminates "repairs." For the same reason, boost for concrete as a road material—it is just as effective in reducing road up-keep costs as in effecting economy on the Farm.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTERED TRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 23. SUSSEX, NEW BRUNSWICK, DECEMBER 18, 1917. Number 6.

Management of Soil Fertility

Henry G. Bell, B. S. A., Chicago, Ill.

The Home of the Plant

The average farmer calls his soils sand, clay, loam or muck. These classes differ in a great many ways. They differ in color, chemical composition, weight, size of soil particles, etc. The difference in size of soil particles is the point of special interest to us at this time.

I hold a small bottle containing about an inch of colored water, and have here three glass tubes—one of fine bore, another a little larger bore, and naother still coarser. When I set the tubes in the water you see that the liquid rises of its own accord to different heights in the two fine tubes. What draws it up? It is the attraction on the part of the walls of the tubes for the water. The liquid rises until the down-pull of gravity just balances the up-pull of the force that is raising the water. This force is responsible for the rise of moisture in the soil. There are spaces between the soil particles reaching from the surface of the soils down to where moisture stands. Water rises in the soil on account of the attraction between the surface of the soil particles and the moisture. The water rises through the spaces between the soil particles, just as the water rose in the bore of the fine tubes.

I speak of water first because it has such an important bearing on plantfood. Plants must have all of their plantfood dissolved in water. You see an actual illustration of the rise of soil moisture. These columns of soil rest in a pan of water. In two hours the water has risen to the heights you see. In just tht same way it is rising in the oil and will continue to rise until it comes to the surface when the water will evaporate and do no good to the crop, if nothing is done to prevent its escape. This can be prevented by early cultivation of the soil, spring ploughing, disking, harrowing, anything to break up the surface of the soil and to preserve a dust mulch, so that the moisture cannot escape in evaporation.

In this last tube is illustrated a practice against which I would warn farmers who are turning a heavy crop of clover, or are making a heavy application of strawy manure. You notice that the water has risen in this tube until it meets the coarse material about eight inches from the top. This couple of inches of coarse material corresponds to strawy manure or to a heavy crop of organic matter turned under, and not thoroughly worked into the soil. The water cannot reach the soil above because the spaces of the coarse material are too large. When applying strawy manure or turning under green crops, be sure to work the organic matter thoroughly into the soil by disking and harrowing, otherwise there is danger of cutting off the water supply for the crops planted in just the same way that the coarse material in the tube prevented the water rising higher. I remember a few years ago, a frind of mine near Chicago said he planned to grow a very large crop of potatoes. He turned down a good growth of rye but did not work it thoroughly into the soil. The green rye which was not thoroughly worked into the soil formed a coarse padding and actually cut off the moisture supply from the area where the potatoes were planted. My friend's potatoes did not sprout and grow as rapidly as they should. He actually starved the crop by shutting off the water supply.

Moisture is of great importance. Sometimes we do not fully realize how important it is in growing our ordinary farm crops. One pound of dry matter in corn, for instance, requires 400 pounds of water to germinate the corn and carry it through to the production of matured grain at harvest time. For each pound of dry matter in oats, wheat and potatoes, there is required the amount of water tabulated on the chart. This is a tremendous amount of water when we consider the average yields harvested. Much can be done to store up this large amount of water by deep fall ploughing. The deeply stirred soil forms a good reservoir to catch the moisture. By early spring working it is possible to prevent excessive loss by evaporation.

Up to this point, I have been talking of conserving the moisture of the soil. May I point out that there may be too much moisture? A good many farms in Canada are in need of better soil drainage. Moisture which stands in the spaces between the soil kernels or particles, shuts out the circulation of air, and air is essential to the growth of the great mass of microscopic life known as bacteria which, under good conditions, thrive in the soil. These tiny forms of life are breaking down the soil so that it may dissolve and become available as plantfood. They are working incessantly. Some of the tiny forms are attached to the roots of legumes—such plants as peas, beans, alfalfa and common red clover. These tiny forms of life are parasitic. They take their food from the plant, but in return have power to fix some of the nitrogen (an important constituent of plant food), which is found in the air that circulates in well-drained soils. Whether the bacterial forms are attached to plants, or exist free in decaying plant matter in the soil, they require well-drained soil. In many sections of this good province, the farmers are in the lead with reference to land drainage. Still much remains to be done in taking care of this prime essential to the right home of the plant. Such water as can be drained off, then, is actually doing injury to the soil instead of good. The water which clings to the tiny soil particles cannot be drained off. It is this water which carries dissolved food for the crops that grow upon your land.

One of the methods of storing up more water in the soil is to add organic matter to the soil, decaying plant material. Organic matter, or humus, acts like a sponge, catching and holding the moisture which falls late in autumn, during the winter and early in spring. It is increased in the soil by the growing of legumes, by the addition of strawy manure, by the turning under of rye or buckwheat or other plant material.

I wish to illustrate another function of organic matter. If I were to take a funnel full of sand, and a second funnel full of muck. When I pour a red liquid on the sand it comes through red, but when I pour it on the muck soil it comes through almost colorless. The organic matter has absorbed the color. If the organic matter of soil has the power to absorb color, it has the power to catch and hold much soluble plantfood which otherwise would be lost out of the soil. Here, to a large extent, is the explanation of the fact, reported by Dr. Zavitz, where the effect of fertilizers, used upon potatoes, was quite evident for two or three years in the crops of barley and oats, which followed the potatoes. What the potatoes did not use was carried over for the barley. What the barley did not use was carried over for the oats. Of course the organic matter has not the power to hold all the soluble plantfood, but this important function of humus in the soil is sufficient to induce greater attention toward increasing the organic matter of the soil.

Organic matter performs other important duties. Applied to sandy soils, it binds together the loose particles, giving them body. Worked into heavy clay soils, organic matter opens up the soils and greatly improves the circulation of air therein.

Let us demonstrate that air does circulate in the soil. Let us show also how a man may injure the circulation of air in the soil, especially if the soil is of a heavy clay type and is worked too early in the spring or too soon after a heavy rainfall. In this first funnel, again, I have a layer of sand, and in the second funnel, some wet clay. You who farm clay soils, have undoubtedly seen the shiny furrows the plow turns up when the clay is a little wet or sticky. Or, you have seen the shiny furrows turned up by the shoes of the cultivator, in cultivating your corn soon after a heavy rain. This clay, then, is in the same condition as the soil which the plough turns up in shiny furrows. When I attach the first funnel to this long bottle, and open the stop-cock at the bottom, if the air can pass through the sand the liquid will run out of the bottle and the column will fall. This, you see, is the case. When I attach the wet clay and open the stop-cock, you see that the water does not run and the column of water in the long bottle does not fall, because the air circulation is shut off. Now, to a large extent, that is what happens in your clay soils when the soils are worked while they are too wet. Of course, I do not wish to say that you shut off the air circulation, but even if any considerable hindrance to air circulation is produced, conditions for bacterial growth in the soil are upset.

We have said that organic matter in the soil (first) has the power to catch and hold water; (second) has the power to absorb plantfood; (third) opens up heavy clay soils; and (fourth) binds together sandy soils. To these duties may be added two more very important functions. They are as follows: Organic matter forms the home and food of free soil bacteria. Now you see the vast importance of good circulation of air in the soil. The bacteria that grow on the roots of the legumes, as well as those that are free in the soil, find it impossible to do best work unless there is a sufficient supply of organic matter in the soil. The soil must be well drained so that air can circulate among its particles.

There is another condition which proves njurious to this microscopic plant life or bacteria in the soil. It is commonly known as soil sourness. I hold a piece of litmus paper. You see it is of purplish color. As soon as it comes in contact with anything of an acid nature, it turns immediately to a bright pink. This is the cue for the soil test. Dig a shallow hole about four to six inches deep in various parts of a field and bury a small piece of this litmus paper for about fifteen or twenty minutes. When you dig it up again, if it has turned pink, there is clear indication that the soil is sour, and is in need of lime.

It is frequently possible to recognize acid soils without testing them. Vegetation that grows on sour soils is usually clear evidence of their condition. If, for instance, you find that there is a scarcity of clover in your soil, and you see moss growing on the surface of the clay and sheep sorrel scattered through the grass or other crops, you can be pretty sure that your soil is sour. Lime is the great corrector for sourness of soil. Lime is found in several forms. It may be purchased in the form of ground limestone, air-slaked burnt lime, hydrated lime, or in the form of marl. Dr. Wheeler, formerly director of Rhode Island Experimental Station, has estimated that one ton of quick lime was equal to one and one-third tons of hydrated lime, or two tons of raw limestone in its power to correct soil acidity. The addition of air-slaked burnt lime to clay soils produces an additional effect. In these two jars I have shaken up clay soil and water. You see in the one, the water is still muddy. In the other, it is clear. I added a couple of spoonfuls of air-slaked burnt lime when shaking up

the latter mixture. If you could examine the surface of the clay at the bottom of the clear jar, you would find that it is coarser than is that in the other jar. In other words, air-slaked burnt lime has the power not only to correct soil acidity, but when applied to heavy clay soil, it gathers together the particles of clay soil into coarser crumbs, and thereby assists the circulation of air in the soil.

The Food of the Plant

So far we have been speaking about the home of the plant. Now I wish to spend a short time discussing the food of the plant. I presume you have not seen this type of corn growing in Ontario. I am not advertising it. It is but a cartoon of a growing corn plant. It is typical of how all plants grow. The lesson it is intended to convey is that the roots act in the same capacity as railroad trunk lines, bringing raw material from the soil to nature's factories, which are the leaves of the plants. This is not vain theory; it is fact. If the farmer recognizes it in its full significance, it will greatly assist him in making conditions right for plant growth. The leaves of the plant are equipped with the most wonderful machinery, just as factories are equipped with machinery. The green material in the leaves is nature's machinery. Under the action of sunlight it has the power of working over the raw material which is brought up by the roots and of re-combining it with carbon dioxide, which is taken in through the leaves, into starch, protein, fiber and other constituents.

Plantfood is made up of fourteen elements. I have recorded here twelve constituents which come from the soil. Arranged in order they are: water, sulphur, magnesium, iron, lime, nitrogen, phosphoric acid and potash. These are known as the necessary constituents and are so-called because all of them must be present in the food of the plant in order for the plant to thrive. Not one can be left out and have complete plant growth from seed germination to the bearing of fruit. To these eight constituents are added chlorine, silicon, manganese and sodium, but we need not discuss these, since frequent experiment has established the fact that they perform no essential function in the growth of the plant. There should, of course, be added to this list, carbon dioxide, which would fall in the first class, but as you see the chart tabulates only those which are taken from the soil. Carbon dioxide is taken in through the leaves. With many of these constituents you are very familiar, and yet from the very familiarity with some of them, if you have not had opportunity to study chemistry, you may have missed some very interesting facts. Water, for instance, while it is a constituent of plantfood, is not an element, but is composed of two things; first, hydrogen gae which I have in this bottle. You see it is colorless, and yet when I hold a lighted match near it, it burns very rapidly with a sort of purplish flame. Besides hydrogen, water contains oxygen, which again is a colorless gas, such as I have in this jar. Oxygen does not burn. When I lower the glowing stick into it, the stick immediately bursts into flame. Now, if two bottles of hydrogen and one of oxygen were exploded with an electric spark, there would be formed a tiny drop of water. You say, "how does this information help the practical farmer to increase his crop yield?" I cannot claim such a practical result from this experiment, but the knowledge of the composition of water itself and how growing plants can re-combine the constituents of water with other things which it takes up through its roots, opens up an entirely new world of ideas to the farmer who has been working with crops and soils all his life.

Sulphur is the next constituent. You are familiar with this interesting yellow substance. In plant life it seems to be closely related to the building up of proteins, or the material which produces flesh. Magnesium is an important constituent of the soil whose duty is not fully established as yet. It seems to have an important function in the plumping of the gernels of wheat, oats and other cereals. Lime, we have said, corrects the sourness of soil. The next constituent is iron. Few people know that the plant, during growth, requires the tiniest trace of iron. Without iron the green material of the plant would fade, and the plant would become bleached. Now do not jump to the conclusion that every pale crop of corn, wheat or oats that you see is in need of iron, because this is not the case. Bad drainage causes crops to turn yellow, as do other bad soil conditions, but the fact remains that the tiniest trace of iron is absolutely necessary to the growth of the plant. The soil nearly always contains sufficient of this substance to upply normal needs. Each one of these constituents is essential, as discussed heretofore, but nature has so arranged the upply that little care is necessary to keep up the required amount, with the exception of lime.

Now we come to these constituents which are frequently called the essential plantfood constituents. They are no more essential than those we have discussed. However, the ease with which they are depleted by continuous cropping has made it possible in many sections for their supply to be reduced below what is necesary to grow the largest yields of best quality crops. The first of these constituents—nitrogen—I have in this jar. You see again, it is a colorless gas. It neither burns nor will it support ubrning. The air which we breathe is eighty per cent. nitrogen. We could not live in a pure atmosphere of nitrogen, but in the dilution with about twenty per cent. oxygen, we seem to thrive.

Here let me make an explanation that none of the constituents discussed are used by the plant in their pure forms, but are found in combination with other materials in the soil. Nitrogen is not used by the growing plant as a gas ,but is used with oxygen and some other material which forms a nitrate of salt in the soil, or it is combined in some soluble form. Nitrogen causes straw growth. It vines the apple tree to grow. Stating it conversely, if there is a scarcity of nitrogen in the soil, the result is shown in short straw, poor tree growth, small growth of potato vines, and the like. If, on the other hand, there is too much nitrogen, there will be too great a straw growth, too much wood growth in trees, and too much growth of vine or stalk of the plant. You have frequently seen this when you plant small grain on muck soil.

The next constituent is phosphoric acid. In its pure elemental form it is called phosphorus—the yellow substance which you see burning so readily. The plant never uses pure phosphorus. Phosphoric acid in plant growth causes the plant to ripen. Crops growing on a soil short of phosphoric acid do not ripen within the normal growing season. This is just the trouble that we are having throughout the great corn belt in the middle western states. Much of the corn is not maturing before frost because continuous growing of grain crops has greatly diminished the supply of available phosphoric acid in the soil.

The third essential constituent is potash. It is one of great importance at the present time on account of its increasing scarcity al over the cicilized world. As you know, previous to the opening of the great war, neary all of the world's supply of potash came from Germany. Here it is found as a ptoash salt. Potassium is very active. A tiny particle burns very actively when I drop it on water. As already explained, this constituent, as well as others, is never used in its elemental form, but is combined with chlorine or sulphuric acid or some other material in forms which dissolve in water and can be readily taken up by the plant. What is the function of potash? This is not clearyl known as yet. Potash seems to have an important bearing on the plant's power to use nitrogen. Potash also has a great deal to do with the laying down of starch within the kernel of wheat, oats, or barley. It ahs also been found that plants growing on a soil deficient in potash do not successfully resist disease.

What are the chances of making good on this continent the large amount of potash that formerly was imported from Europe? There are no deposits of potash salts in America as pure as those found in Europe. Potash is found, however, combined with a sort of granite-like rock in Utah. It is also found in the sea-weeds of the Pacific and the Atlantic oceans. Moreover, lake water strong in potash has been found in small lakes in Nebraska and California. All of these sources are being developed at the present time, but the total amount of potash does not aggragate one-fifth of the normal demands.

All of the foregoing plant food constituents are found in virgin soils, yet continuous cropping has been drawing upon the soil store-house to such an extent that one or more of the constituents is becoming dangerously near depletion. The late Henry Wallace, of Des Moines, used to say that the farmers of the middle and western states were soil miners, not soil builders They have been growing crops so persistently without attention to the upkeep of soil fertility that both the yield and the quality has suffered. Some have sought a solution in rotating their crops. But there comes a time when the soil will not respond even to the best tillage and the best rotation unless some plantfood is put back. When the rotation of crops contains a legume, some of the nitrogen is put back, if the second crop of clover is ploughed under. If the second crop of clover is cut and taken from the land, very little addition of nitrogen is contributed as a result of the growing of the legume crop. For some years past I have been conducting an investigation relative to the amount of nitrogen fixed by the various legumes growing on the farm. In this investigation I have corresponded with all of the leading experiment stations on this continent, as well as with some in Europe. The consensus of opinion seems to be, as I have stated, that if the second crop of clover is ploughed under, there is an addition of nitrogen to the soil, varying inversely with the richness of the soil. On many farms buckwheat and rye and other crops are turned under as green crops. These do not make any addition of plantfood. They do add organic matter.

For more than one hunred years the farmers of this continent have been hearing about the value of barnyard manure as a carrier of plantfood, and still you can go up or down any road and find farmers who are piling the manure under the eaves of the barn where every rain washes through it and carries off soluble plantfood in the brown stream that runs away from the manure pile. Now this brown stream carries off more than fifty per cent. of the soluble nitrogen and potash, as well as a considerable amount of the soluble phosphoric acid of the manure. Average analyses show that well-stored manure carries, to the ton, twelve pounds of nitrogen, five pounds of phosphoric acid and ten pounds of potash, but if this manure is exposed to rains and snows, over half of these constituents of plantfood is lost. For the last twenty years, Director Thorne, of Ohio Agricultural Experiment Station , has been making a study of strengthening stock manure. Dr. Zavitz knows the high type of work being conducted by Dir. Thorne, and I am sure agrees with me that the findings of this well-known investigator are entirely practical, and important to the progressive farmer. Dir. Thorne, as a result of twenty years' careful study, recommends the addition of forty to fifty pounds of acid phosphate to the ton of manure, so that the plant-ripening plantfood carried by the manure may be balanced in proportion to its nitrogen and potash. This material can either be spread on top of the load of manure or it can be distributed on the surface of the land with a lime spreader, and worked into the soil when the seed bed is being worked down.

The next source of nitrogen, phosphoric acid and potash is fertilizers. While travelling up and down this continent, from the Mississippi to the Atlantic, and from Tennessee to Ontario, I find a great variation in opinion relative to what fertilizers are and what service they render. The use of fertilizers is a practice of comparatively recent date in some sections of the country, yet in others—especially in Europe—fertilizers have been used for the last one hundred years. We are hearing more about the use of fertilizers during the last year or two, because as I said at the beginning, the cry is for more food, and more food results from greater yields, and greater yields are obtained by propr soil handling, including the judicious use of fertilizers. The manufacture of fertilizers is an industry based upon definite scientific principles. As understanding of the proper use of fertilizers, while it may appear simple, is still based upon somewhat difficult physiological facts. This being the case, it is quite natural that ignorance marked the early use of this soil amendment. The beneficial use of fertilizers was discovered by an English manufacturer whose hobby was farming. This man, Sir John Bennett Lawes, was also founder of the Rothamsted Experiment Station. In fact, his test of fertilizers formed the basis of the Rothamsted Experiment Station tests. Lawes was a pioneer in his work with prepared plant foods. He succeeded in instituting tests from which he was able to determine the effects of applying various plantfoods upon various farm crops.

The various important functions that fertilizers perform are: First, they supply soluble available plantfood to the crops; second, they give the crops an early vigorous start; third, they hasten crop ripening; and fourth, if used judiciously, they increase the farmer's profit.

How is a man to know what fertilizer he should add to his soil, in order to produce the largest yields of best quality crops. This is a question which is being asked every day. Shall he have the soil analyzed? When I was in charge of the soils work at the University of Maine, I used to receive many letters accompanied by small samples of soil. They requested me to analyze the soil and to tell what fertilizers to apply in order to produce one hundred bushels of corn to the acre. The chemical analysis of the soil, of course, is a comparatively simple matter, and as far as the sample under examination goes, the analysis shows the total amount of nitrogen, phosphoric acid and potash in the soil. But the soil analysis, while to a man trained in chemistry, it is a guide, has limitations when applied to working out this question of the management of soil fertility. I know that Prof. Harcourt agrees with me when I say that a chemist can tell you what is in your soil, but cannot with assurance recommend exactly how much or what plantfood should be added. A chemical analysis does not tell you anything about the physical conditions of your soil. Dr. A. D. Hall, former director of Rothamsted station, said before the British Association in London, 1910, that he considered the size of soil particles of more importance than their actual chemical cmposition. He meant that the physical condition of the soil has more to do with its productivity than the potential amount of plantfood contained

therein. Now, chemical analysis has a place, and that place is splendidly illustrated by the soil survey work that Prof. Harcourt is conducting throughout the Province at the present time. Representatives of the college staff are visiting various parts of the Province, taking exact samples of soil, classifying the soil on the basis of its total plantfood, and are mapping out areas of similar soil types so that the practices in one section which are found to give good results may be with certainty recommended for other sections.

We know that soils have various supplies of plantfood. The characteristic supplies of plantfood in the common soil types are as follows:—

Soils	Nitrogen	Phosphoric Acid	Potash
In sandy soil	Poor	Poor	Poor.
In clay soil	Medium	Medium, but frequently unavailable.	Medium, but frequently unavailable.
In muck soil	Abundant. This nitrogen is very largely in the organic or slowly available state.	Poor	Very poor.

To this information must be added a knowledge of the characteristic plantfood needs of the crops. For instance, ordinary farm crops may be divided roughly into three classes, namely, hay crops, grain crops and root crops. The hay crop is cut when it has made its maximum growth. It, therefore, takes a large supply of nitrogen, a medium supply of phosphoric acid and a fair supply of potash. Grain crops, on the other hand, are harvested when the grain is ripe. Consequently, they take an abundance of phosphoric acid, and a fair supply of the other two constituents. Root crops take a good supply of nitrogen, but a large supply of potash, since they develop a relatively large per cent. of starch. Now, if the farmer has in mind the information contained in the first part of the chart, and that contained in the second part, he can intelligently establish tests both as to the quantity and quality of the fertilizers that give best results under his farm conditions.

The next question of great importance deals with the application of fertilizers. How are fertilizers best applied to our various crops? Two years ago I tried to interest the American Society of Agricultural Engineers at our various agricultural colleges in a series of tests as to how fertilizers were best applied. I regret to say that no great fund of information has resulted from this recommendation as yet. It is still an open question as to how deep fertilizers should be drilled, as to how close to the crops they should be applied and as to what quantity should be put in the row or distributed between the rows for cultivated crops, such as potatoes, corn and the like. We have made careful observation, as we have visited the farms of successful users of fertilizers, and have come to some fairly definite ideas regarding the right and wrong way of applying fertilizers. Not long ago it was my opportunity to visit an experimental field at one of the prominent middle western experiment stations. I found that in their tests they were applying the fertilizer broadcast on top of the sod and ploughing it under, probably to a depth of five to seven inches. Fertilizer users in the middle west consider an application of three hundred pounds per acre relatively heavy, and yet if you figure how much that would be per cubic foot, you will find that you could hold it in a very small bottle. Just think of fertilizers being applied at that rate per acre and buried six or eight inches deep. What possible results could a young crop have of gaining assistance when available plantfood is placed so far away from it? Other fertilizer users are scattering the fertilizer on top of poorly prepared seed beds and are not working it into the soil. Now we said sometime ago that fertilizers were carriers of available plantfood. We also said that the plant could use only such food as is dissolved in the water of the soil. If this available plantfood of fertilizers is to be dissolved in the water of the soil, it must be worked down into the damp soil. Fertilizers give their best results when drilled about the depth at which the grain is planted. This application is accomplished best through the fertilizer dropper of the grain drill. This machinery sows the fertilizer into the damp soil at about the proper depth. If, however, you do not have a grain drill with a fertilizer dropper, satisfactory applications can be made by sowing it on top of the ploughed land with the lime spreader. When the land is being disked and harrowed in the preparation of the seed bed, the plantfood will be worked into the soil at about the proper depth.

Remember that the same principle underlies the successful use of fertilizers as applies to the use of valuable farm machinery. If the machine is adapted to the crop on which it is being used, and if it is properly handled, all chances are in favor of the investment in the machine returning a profitable interest. If fertilizers are adapted in analysis to make up for the weakness of the soil, and to meet the special needs of the crop, and if they are properly applied, a paying interest on investment follows.

I have already referred to the grain drill with fertilizer dropping attachment, and to the lime spreader. To these should be added the special machinery designed for the planting of potatoes, corn and other crops. Any and all of these have been carefully constructed to take care of the dropping of the seed and of the application of fertilizers.

In the presentation of these facts concerning soil fertility and plantfood management, I have tried to develop the subject logically, emphasizing the fact that the point of first importance is the proper preparation of the plant home. When this has been taken care of, the question of the proper balance and supply of plantfood becomes of prime importance. Fertilizers will not take the place of a well-prepared seed bed, good drainage, or cultivation of crops, but if used intelligently in combination with proper soil tillage, lining where necessary, and the up-keep of organic matter, and in combination with the use of high-grade seed, fertilizers will return a big profit on investment.

The business of farming is not simple. It is complex. My conception of it may be illustrated by an arch. On the one hand, this arch rests on the corner stone of soil fertility, while on the other is rests on the corner stone of marketing. It is useless to talk of producing larger, better crops if the subject of marketing is not given equal care. This remark, of course, applies to normal trade conditions. The keystone is business management. The other stones are: efficient help, suitable live stock, favorable weather conditions, seed selection, efficient machinery, proper drainage, good tillage, judicious liming, and proper manuring and fertilizing. All controllable factors must receive attention if best results are to be obtained.

WHY BACON IS DEMANDED

Many reasons combine to make bacon an exceedingly important meat item in the war time trade from this continent to Great Britain and the armies at the front. It should first of all be understood that, in the trade, "bacon" means more than is usually referred to as "bacon" by the general public. "Bacon," as a trade term, includes the entire hog when dressed and split into sides, either "green" or "cured." The Wiltshire side averages from 50 to 75 pounds, of which only 7 per cent is bone. This means a great economy in space when packed for shipment, for Wiltshire bacon is practically solid meat, and can be packed flat in cases of convenient size and shape, 14 to 16 in a case without loss of space.

The superiority of bacon in this respect is shown by comparison of the average percentage of bone in the different dressed carcasses as reported by a leading abattoir:

Wiltshire side bacon. 7 per cent bone.
Dressed beef.....20 per cent bone.
Mutton.....20 per cent bone.
Veal.....25 per cent bone.

As a result of the present shortage of available ocean tonnage, this point is of no small consideration. Moreover, bacon is very high in food value. The following table shows the relative food values of the principal meats entering into domestic consumption expressed in "calories," the units of heat and energy fixed by dietitians in considering the use of different foods to the human body:

	Calories.
Bacon (cured and smoked)	2,930
Mutton (including tallow	1,520
Side of beef	1,180
Lean beef	670
Veal	640

Theese figures show that more vital heat and energy are concentrated in a pound of bacon than in a pound of beef, veal or mutton. The fat constituent of bacon is of particular advantage to men working and fighting in the open air, especially in a cold, wet climate. And the shortage of fats in Europe is acute.

Another advantage of bacon and other hog products in the present circumstances of this war is that there is less "shrinkage" in the handling of hogs. The difference between a live hog and a hog killed and dressed is only 25 per cent. The different domestic food animals compare in that respect as follows:

	Live Weight. Lb.	Dressed. Lb.	Shrinkage. Per cent.
Hog	170	127½	25
Steer	1,100	550	50
Calf	150	75	50
Sheep	150	75	50
Lamb	100	50	50

In the case of bacon and hog products there is less waste than in the case of other meats.

Veal, lamb and mutton are not authorized in the army rations. These meats have to be shipped fresh or frozen. Bacon, once cured, runs little or no danger from spoiling and can be handled with less care and expense. The curing process consiss of an immersion in salt and water at a temperature of 40 degrees for 15 to 20 days. In England the cured Wiltshire is smoked, cut up into shoulders, sides, hams, etc., repacked in smaller boxes and sent to the front. Every part of the Wiltshire side, including the ham, thus reaches the soldiers.

Another point emphasized by the Food Controller just now is that pigs can be produced more rapidly than beef cattle, sows being capable of caring for two litters of young pigs per year, the young sows being sufficiently mature for breeding purposes at one year old.

Beef is second only to bacon in food value, percentage of shrinkage, percentage of bone, and economy of handling. This explains why beef and bacon are the meats especially required for export, and why the people of Canada are asked to conserve them.

WHY WHEAT IS NEEDED

There appears to be some misunderstanding as to why wheat especially should be saved ofr export and why other cereals will not meet equally well the requirements of the Allied nations in Europe. It is important that the people of Canada should know the reasons for the Food Controller's regulations and appeals, and it is earnestly hoped that people will give as wide circulation as possible to the following facts:

Three grains—wheat, rye and barley—are peculiarly suited to making bread. They contain certain elements which can be kneaded when mixed with water. When yeast is added, they raise and maintain a continuity of structure. When the latter is baked it forms a loaf which will keep and can be transported. None but these three grains will make bread as it is commonly known. In a recent address on the wheat needs of the world, Dr. Alonzo Taylor said:

"As one follows each natoin's development upward in an economic sense, one notes that they first eat barley. As it becomes more prosperous, barley is thrown to one side and rye is used; and finally rye is cast aside and it subsists upon wheat. This has been the history of most Aryan peoples. The United Kingdom depends almost entirely upon wheat for its bread. Italy consumes wheat bread, but bread is not so prominent as elsewhere. Rye is universally used in Russia, and barley is still employed as a bread grain. The reason why wheat supercedes rye and barley is because the bread is whiter, of a finer texture, and has unquestionably a better taste. The flour has somewhat better keeping qualities, and wheat flour lends itself to the making of pastries and fancy articles as no other flour does."

There are at least two strong reasons why the Allies cannot use other cereals entirely to make up their deficiency in wheat:

1. People who are working under unusual stress are not in a situation to tolerate any marked deviation from the normal diet.

2. European trade conditions make such substitution extremely difficult. In North America the bread used by more than half of the population is baked in the household and less than 50 per cent is purchased from the baker. If the Allies are not supplied with enough bread grains to make a loaf, then people must be taught an entirely new use of cereals in their homes. Domestic baking is economically wasteful, in addition to the other objections to this alternative.

Quoting again from Dr. Taylor's address. "In England there is a large use of rice. In England, Scotland and Ireland there is a heavy use of oatmeal. The people of the United Kingdom will take corn also. The same thing is true of Italy. Corn in the form of polenta is used in Italy, and rice is also a frequent article of the diet. Wheat flour, although used for bread, is not entirely depended upon by the women of Italy.

"The women of France are absolutely dependent upon wheat bread, which forms 52 per cent of the total food of the French people (the present ration is 18 ounces per day), a larger percentage than with any other nation of the world. They eat no rice, no corn; they know nothing of oatmeal and rye, and of barley have little knowledge. The problem rises with France. If we were to estimate the wheat our Allies have raised, add to it the 200,000,000 bushels of exportable surplus wheat from Canada and the United States, and then send the balance of their need in other cereals, there would not be enough wheat flour to go around. You can not make good bread if you have as low an amount as 60 per cent of wheat flour with 40 per cent of other cereals. From a practical point of view, bakers fails to make bread under these circumstances. You can get along on the proportion of 75 and 25. Unless we wish to impose upon the French women the burden of entirely recasting their households, it is up to us to get more wheat to the Allies, and especially to France."

In this connection, Mr. Herbert Hoover, Food Administrator of the United States, says. "For a hundred

(Continued on page 188)

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DECEMBER 18th, 1917

DATES OF ISSUE

January	8-22
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BOOKS AND READING ENHANCE FARM LIFE

As evidence that farmers are reading more now than they have in the past publishers point to the fact that a larger number of books are now being sent out over rural mail routes than at any time in the history of the publishing business. And they say these books are not limited to technical subjects, that the demand is for books of a general literary character and quality.

It is a hopeful sign when any class of people begin to read more good books. It means a higher degree of intelligence and refinement, better citizens and more skilful workmen. There has been a tendency on the part of many farmers to look with disdain and distrust upon the science of agriculture as taught from books but that spirit is disappearing and in its stead we find a wholesome desire to acquire knowledge from every available source. This is particularly true of the younger generation, although many of those now past their prime are also alive with new interest to th ethings that pertain to the business at which they have spent the greater part of their years.

There is no way of measuring the value of a good book. Milton said: "As good almost kill a man as kill a good book; who kills a man kills a reasonable creature, God's image; he who destroys a good book kills reason itself." No home, in which there are boys and girls, should be without a fair-sized library of good books. Abraham Lincoln was able to acquire much knowledge from two or three books, but in this day and age it is better to have a well-balanced library of books covering a wide variety of subjects, not only those relating to the work and life of the farm, but some well-selected works of fiction, travel, adventure and history, etc. Such books, kept in neat cases where they are always at hand, help to furnish a home an dsupply a fund of ready information and instructive entertainment.

The advice of Bacon was this: "Read not to contradict and confute, nor to believe and take for granted, nor to find talk and discourse, but to weigh and consider." Anyone who will do this will grow in intelligence and knowledge and will find greater enjoyment in life.

BILL TURNERS WAY

Bill Turner was a farmer; he labored all his life. He didn't have no schooling and neither had his wife. But Bill was built for business and made the wheels go round, and left a healthy fortune when they put him under ground. He was always taking chances, paid 5 hundred for a bull. His neighbors called him crazy, but he left a stable full of cows that broke the record making butter by the ton and Bill he had his picture printed in the Equeedunk Weekly Gun. He had new-fangled notions of making farming pay. He even bought a fool machine to help him load his hay. The neighbors fairly snorted when they saw the bloomin' thing; said Bill would never make it work; it wasn't worth a ding! Bill didn't say a single word, an' didn't care a darn 'bout what they said, fer as slick as grease his hay went in the barn an hour before a thunder storm came sailin' out that way, and caught his neighbors in a pinch and spoiled their new mown hay. Jim Smith put all the milk in cans, and set 'em in a tank. Bill skimmed his milk with a machine and turned it with a crank. To-day Bill's wife rides in a car and dresses up in silk. Smith's wife rides in a wagon and keeps on skimming milk. —Taylor County (Ky.) Enquirer.

HAVE SYSTEM AND REGULARITY IN FARM CHORES

Doing chores is often considered a very unimportant part of the farm routine and one which many try to dispose of as soon as possible regardless of time, quality or circumstances. On many farms they are done just whenever it is most convenient to take a spare hour from some other part of the farm work. This subordinate position to which the chores of the farm are so frequently relegated has much to do with the failure of the live stock industry where slipshod methods are practised.

There are three fundamental principles that should be observed in doing chores, especially on a live stock farm. First, they should be done regularly. Very much of the value of doing things comes from the fact of doing them regularly. When by actual experience one comes to know that a thing needs to be done at certain intervals and regularity is observed in the doing of it, there is little danger of loss through neglect, but when the job is left for a convenient season, that season is likely in many cases to be left too long and damage in one way and another occurs. For instance, stable-cleaning should be a daily matter. If it is not, in most cases it will become a filthy place, and then when any little excuse arises, it will be an easy matter for one to leave it over for an extra day at any time and matters get into extreme conditions too frequently for health or other matters of progress.

Then in the second place, it is found that punctuality is the twin sister of regularity. It is not enough that chores be done every day, every half day, at each end of the day, or, once or twice a week, although in the latter case the difference will not be felt so strongly, but it is essential that as far as possible they hould be done at exactly the ame time. Especially will this apply to the feeding and milking of dairy cows. The animal body is wonderfully subject to influences and when fed for a short period at a certain hour becomes so accustomed to it that a nervous condition arises when the ordinary rule is not observed. Every man wants his dinner at a certain hour and if it is not ready on time he sometimes gets a nervous shck and loses his appetite altogether. He is supposed to be a reasoning animal, and if, with all his intellect he gets into such a state, what should be expected of the horse or the cow that is supposed to have no reasoning capacity, and yet has food withheld now and then for an hour or so and in the case of the cow milk painfully distending her udder? It is little wonder thta she becomes uneasy and nervous. Anyway it is well known in actual experience that herds treated in this way soon fall off badly in yield of milk and individuals come far short of their normal fat production as well as yield in milk.

The third essential principle in doing chores is that of system. Without system in labor there must be great waste of energy. It is much like a man going at his work with his eyes blinded. He never knows just where to go or what to do next and so at every turn he must feel around until he comes in contact with some familiar object in order to get a new starting point. The man who works without system never knows where to find his working tools for he cannot remember just where he left ff and so he must hunt. He frequently misses some part of his work altogether or has to go back over the ground the second time because he has no beaten path to follow.

System avoids the possibility of overlooking any part of the regular work. When one becomes accustomed to a certain routine they will follow it almost unconsciously. Work can then be planned to economize in travel and in doing the work first that naturally plays into the next job on hand. System is a great time saver inasmuch as no time is lost in the various ways enumerated and in trying to overcome them by special effort, many accidents are avoided by always having work well in hand and none forgotten.

FOOD FOR PLANTS

Every reader of a farm paper must have encountered frequently the expression "available plant food." As defined by R. R. Hudelson of the University of Missouri College of Agriculture it means the plnat food which will readily dissolve in the soil water so that the plant can take it up. In the animal stomach there are certain digestive fluids that dissolve the food so that it can be absorbed into the blood stream. The soil must serve as a stomach for plants and as the plant food dissolves in the soil water it is absorbed into the plant juices and moves up through the plant where it can be used. The extra water evaporates from the leaves and moves up, giving a constant circulation. From this it can be seen that only dissolved plant food can be used. Almost all soil materials can be dissolved to a slight extent but often the rate of dissolving is too slow.

* * *

When buying pedigreed stock the wise buyer will study the pedigree of the man who bred the animal as carefully as the animal itself. A good reputation is a good asset in selling registered animals.

PROFITS FROM STEER FEEDING

At the Experimental Station, Kentville, N. S., experiments have been conducted with winter feeding of steers purchased in the fall and turned off in the spring for beef. Eighteen steers purchased in November, 1913, cost 5¾c, and were sold at 7¼c per pound live weight. They averaged 1050 pounds at the start of the test covering 140 days, and when finished averaged 1272 pounds, making a gain of 222 pounds per steer. The average cost of feed per steer was $28.35, or 20¼ cents per day. The averave cost of each steer was $60.37. They sold for $92.22, increasing in value $31.85, which, less cost of feed $28.35, leaves a profit of $3.50 per steer.

Twenty-four steers purchased in November 1914 cost 5¾ cents and were sold at 7 cents per pound live weight. They averaged 853 pounds at the start of the test covering 121 days, and when finished averaged 1091 pounds, making a gain of 238 pounds per steer. The average cost of feed per steer was $24.42, or 20.18 cents pr day. The average cost of each steer was $49.04. They sold for $76.37, increasing in value $27.33, which, less cost of feed $24.42 leaves a profit of $2.91 per steer.

Twenty-four steers purchased in November, 1915, cost 5½ cents, and were sold at 7½ cents per pound live weight. They averaged 842 pounds at the start of the test covering 120 days, and when finished averaged 1065 ponds, making a gain of 223 pounds per steer. The average cost of feed was $25.14, or 20.95 cents per day. The average cost of each steer was $46.31. hey sold for $79.88, increasing in value $33.57, leaving a profit of $8.43 per steer.

November 1916 cost 6½ cents, and coulud have been sold at end of feeding period for 9½ cents per pound live weight. They averaged 858 pounds at the start of the test covering 136 days, and averaged 1154 pounds at the time making a gain of 296 pounds per steer. The average cost of feed was $31.15, or 22.9 cents per day. The average cost of each steer was $55.77. They could have sold March 31st for $109.63, increasing in value $53.86, leaving a profit of $22.71 per steer.

The above steers were carried to May and sold at 11 cents per pound live weight on the 14th and 28th May, sold, making a gain of 35 pounds in 50 days from April first to sale. The feed cost for this period was $12.21 per steer, or 42.42 cents per day. They sold for $130.79 each. The cost for feed $43.36, and the purchase price $55.77; or a total of $99.13, leaving a profit of $31.66, or a gain of $8.95 each above cost of feed, over what would have been made had they been sold at the price offered on March 31st.

It will be noticed that the spread between buying and spreading prices was 1½ cents per pound in 1913-14, 1½ cents in 1914-1915, 2 cents in 1915-1916, and 3 cents in 1916-1917, had they been sold on March 31st as were the others the three previous years. The 1916-1917 sters were, however, held for a higher market with a consequent spread of 4½ cents which accounts for the unusual profits.

The 1913 steers were fed 60 pounds roots, 12 pounds hay, 5½ pounds meal mixture per day on the average. In 1914 they were fed 60 pounds roots, or 45 pounds ensilage, 12 pounds hay, and 8.65 pounds meal mixture per day no the average. In 1915 they were fed 47.6 pounds roots or 32.9 pounds ensilage, 10 pounds hay and 6.17 pounds meal per day. In 1916 they were fed 52.71 pounds turnips or 42.64 pounds ensilage, 10 pounds hay and 5.10 pounds meal mixture per day. It would appear that average of 50 to 55 pounds roots or 40 to 45 pounds ensilage, 10 to 12 pounds hay and 5 to 6 pounds meal mixture per day is a satisfactory ration for economical gain in steers of the size under test during the past three years. The heaviest feeding of turnips or ensilage and the lightest feeding of meal mixture is made at the start of the feeding period, one pound of meal and 60 pounds roots or 45 pounds ensilage being given at that time. The meal is gradually increased and the succulent feed lessened as the period advances.

The meal mixture used was composed for the most part of 200 pounds bran, 2000 pounds cottonseed, 10 pounds cornmeal and 100 pounds crushed oats in 1913, 1914, 1915. Owing to the high cost of cornmeal and oats, they were, excepa at the start of the feeding period, left out of the ration in 1916-1917, and the meal mixture was composed principally of 200 pounds bran, 200 pounds middlings and 300 pounds cottonseed mixed. The mixture used cost $1.50, $1.55, $1.55 adn $1.89 per hundred in 1913, 1914, 1915 and 1916 respectively. The meal mixture used in 1916-1917 to March 31st, was bounght on a low market and at the end of the feeding period the prices of feeds were considerably higher, costing for the last period of 50 days after March 31st $2.25 per hundred.

One shorthorn steer born July 12th, 1914, raised from birth, sold at 20-2-3 months of age for 7½ cents per pound. It weighed 985 pounds, costing $56.75 for feed, leaving a profit of $17.11. The cost was $11.94 for the first six months, $14.09 for teh second six months, $15.06 for the third six months and $15.66 for the remaining 80 days. One born May 17, 1915, was sold at 23 months for 10 cents per pound and weighed 1045 pounds. The cost for the first year was $40.23, for the next 23 months $37.545. The meal fed the first steer averaged 2.32 pounds per day for the period, and to the second 3.26 per day. The second steer was fed the year nearly double the meal given the first one, approximately 3 pounds per day on the average. While some meal is necesary the first year, most economical gains will be made when it does not exceed an average of 2 pounds per day, commencing with very light feeding when the calf is about 6 weeks old and gradually increasing. The meal ration used is equal parts crushed oats, bran and oilmeal.

FIRST AID TO ANIMALS ADD DOLLARS TO INCOME FROM LIVE STOCK

How helpless is the veterinarian when called to render first aid to live stock, unless he has with him a few useful tools or instruments, also some of the common drugs used in everyday practice. If this be true, then the farmer and live stock owner must be at a far greater loss to render first aid to sick and injured animals, unless he is equipped with some tools to work with, and has a few useful stable remedies to give or apply.

Now let us consider for a moment what is required. First, every farmer should know something about the restraint of domestic animals, in order to protect himself against injury when doing minor surgical operations and giving or applying medicine. Besides, every farmer should have at hand a well-made ordinary rope stick twitch. It is made by simply boring a hole one inch from the end of a piece of hard wood twenty inches or more in length, another smaller hole near the other end for a string. Tie a small rope loop in one end, slip loop over upper lip, tighten fairly snug to attract the animal's attention while you work on him. If you have no assistant, tie end of twitch stick to throat latch, and leave it tied until you are through with the operation. You can make a dozen different kinds of twitches, all of which act on the same principle, and may be applied to the lower lip or ear, but preferably to upper lip. Frequently, I find it convenient to use a bridle bit, a large iron ring, a short piece of wood, iron, or iron pipe to twist and shorten the loop; but with this kind you need a helper.

The "War Bridle."

Another simple means of restraint is a "war bridle," which is conveniently made by using a piece of small rope, making a loop that will not slip on neck, passing one end through mouth, the other through the loop; or, use an ordinary neck strap with D ring, attaching a piece of rope to ring, passing it through mouth and back through the ring, then have the assistant tighten rope—this will attract while you are working on him. There are many different kinds of war bridles used by horse-breakers, but I have mentioned the most simple one. Another very useful means of restraint of the horse is a loop and rope gag, which is applied by making a small loop one end of rope, pass rope through mouth, over pole, then end of rope through loop, tighten and tie with one-half hitch; or you may use a rounded piece of leather for mouth with billet one end and buckle on the other, which can be tightened and locked without the aid of an assistant.

Another good means of restraint is a piece of strong strap one and a half inch wide and eight inches long with a ring on each end and straps attached to each end with bucple and billet. These straps should be long enough to buckle around the hind leg of a horse or cow above the hock joint, or above the knees of a horse. This simple appliance will often prevent the horse from striking you while working on head or fore part of body; also, prevent either horse or cow from kicking you with sufficient force to do any harm. It is often very convenient to make a loop with a hame strap, slipping it over hoof, then hold up foot and buckle strap to surcingle or snugly around fore arm; this holds the foot up and very often prevents horse from striking or kicking. When fore foot is held up by hand, be sure and compel the horse to rest his full weight on the three legs. Don't hold up or support the weight of body, or the horse will then be able to kick you with either hind foot.

It is also very convenient to keep on hand a set of breeding hopples, which can be made at small cost. Have your harness maker make two straps, one and a quarter inches wide with D ring fastened three inches from buckle, the billet should be long enough to go around the pastern, shin or above hock at horse's leg. Two pieces of rope five feet long can then be spliced to each ring, one into rings of strap, the other a ring with rope fastened to it. Then pass the rope around neck and fasten it to the ring, which is four or five feet from the hopple, and tie it so that it can be quickly released. This simple appliance can be quickly adjusted and will often prevent a person from being kicked while stitching wounds or applying medicine to the hind quarters of a horse, or cleaning the sheath of a gelding.

Methods of Throwing

Every farmer should know of a simple and safe method of throwing a horse down. Gleason's method is very simple and all that is required is a halter and rein; also a knee strap to tie up one fore foot, and a piece of rope twelve or fifteen feet long. The left fore foot is strapped up, the rope is attached to right fore pastern, passed up over right shoulder and back. Then you stand at left side, push the horse from you, then he drops on both knees. Let him remain in this position for a few moments—gently pull head to right side towards shoulder, then after a little time horse will lie down on his left side, then keep head suspended, both knees folded. Rarey's one man method of casting a horse is similar to that of Gleason's, but knee strap is applied to right fore lef, and the foot raised against the elbow. A rope is then placed around near (left) fore pastern and another around near (left) hind pastern. The leg ropes are then passed through a ring attached to a surcingle and carried over back. The operator, of course, stands on the off (right) side against the horse. The head is drawn around to the opposite side by means of a halter rein, then the operator pulls the ropes and the horse goes down quickly, then he can be tied. Wounds on hindquarters of a horse can frequently be safely stitched by backing the animal against a stall partition.

Restraint of Cattle ..

The ox is extremely susceptible to pain, hence the necessity of prompt and effirient restraint in order to protelt the operator against personal injuries as a result of kisking, as well as goring. A very useful cattle tool is the nose clamp with rope, or if an assistant will place one hand on horn and thumb and finger in nostrils, an ox can usually be controlled. The restraint of one hing leg can sometimes be accomplished by passing tail between hind leg which you aim to control A surcingle buckled tightly around flank of cow will very often cause her to stand quietly and allow you to handle her. A hock twitch is also a very useful tool, so is the knee strap. The breeding hopples can very often be used to good advantage in restraining an ox. In order to cast an ox, secure a piece of rope thirty-five or forty feet long to the horns, pass it along upper part of neck, and half hitch around base of neck; also around chest and flank; place a nose clamp on nose, then the asssitant pulls on rope, and the animal will soon lie down.

Holding the Leg

In order to work on the hog with safety, especially if the animal is aged or large, they should be restrained, and there are many mchaneical devices for doing it. A novel method is to lay a barrel on its side, place some feed in the botton, the hog walks in after the feed, then the barrel can be set on end and the hog caught in this way. Or a loop can be placed on hind leg conveniently. The Champion hog holder is a mechanical device, made of metal and one man can hold a very large hog. A young pig can be suspended in the air either wholly or partially by hand, and an older hog is evenly cast and readily tied. A very convenient method is to pass a rope with loop on it around body back of fore legs, then suspend fore quarters in the air. Another method is to pass a loop around upper jaw back on the tusks and tie hog to post. A shy hog can be snared by baiting one part of slip loop. When he bites the bait, pull rope and rope tightens around the upper jaw back of the tusks. Then tie him to post or tree.

Useful Veterinary Instruments

It always pays a farmer to keep on hand useful veterinary instruments and a few stable remedies, in order that he may intelligently render first aid to injured and sick live stock. A suitable place should be made to keep these supplies in, then when needed they can be easily found. In many localities there is no veterinarian available, and if so, it may be impossible for him to respond promptly to your call; hence, the necessity of being equipped to do emergency work yourself. In the kit of supplies you should have needles of different sizes for stitching wounds, also silk or linen or other sewing material of different weight. You should also have a syringe that holds not less than one ounce, that can be operated with one hand; this instrument is suitable for giving medicine and injecting wounds. You should also own a fountain syringe, which you will find to be extremely useful in washiny out vagina or rectum, or irrigating wounds. Every dairyman should keep on hand a few milking tubes, teat plugs and a teat expander. The farmer should also own a male and female catheter for horses, and also an ecraseur or an emasculator for castrating animals. Keep on hand a clinch cutter and pinchers for removing horse shoes;

Continued on page 188)

HORTICULTURE

STUMBLING INTO ORCHARDING

Some years ago I was induced to take 5,000 apple grafts to grow for a nursery firm. When the trees were ready for market they were oversupplied and asked me to go out and sell them. In order to get anything for my work I had to buy out their shares. I sold hundreds of fine trees five to seven feet high at 10 cents each. I also planted 91 trees on my farm. Two years later I planted another block and two years after that some more. With 77 trees which were on the farm when I bought it and which were set forty years ago, this made me an orchard of 324 trees. They were set 33 feet apart each way."

This summarizes briefly the start in apple orcharding which J. T. Geer of Hampshire county, Mass., made 23 years ago when he set his first home-grown trees. It acounts also for the large number of varieties which are found in his orchards, Mr. Geer was fortunate in having the soil and ocation which are ideal for the production of high quality apples. He has learned the business of orcharding so thoroughly that at the New England fruit show in 1915 he was awarded a silver cup by the Massachusetts board of agriculture for the most prizes won by a Bay state orchardist. Another orchard of 160 trees was planted a few years later, while four years ago 175 were set, some of which showed fruit the second year.

For 16 years orchards were cultivated annually and silage corn or some other crop was grown. The trees made a vigorous growth and bore well, except the Northern Spy. For 17 years this variety showed practically no fruit and Mr. Geer was on the point of grafting them. The Russets alongside, the McIntosh and the other varities had been bearing profitable crops for from six to ten years. A western expert to whom he explained his trouble advised August pruning. This was done and the following year the Spies bore a healthy crop. The heads were not only thinned out in August, but the leading branches were cut back; since then the trees have continued to bear a full crop bi-annually.

Color Lacking in Cultivated Ochards

One year the McIntoshes produced a big yield, but the fruit lacked good color. It was also of such poor keeping quality that he was obliged to make a sacrifice sale in order to get it on the market quickly, and realized only one dollar per barrel. He then gave up cultivation and seeded down the orchard. The color and keeping quality improved wonderfully. "I would not have those McIntosh trees plowed for $500, nor use any stable or hen manure for any amount," said Mr. Geer, " for I know it would work great injury."

The grass is cut once or twice a year and left for a much. The trees are sprayed four times during the season with lime-sulphur and arsenate of lead. Because of their liability to scab the McIntoshes are sprayed six times. The orchards are given an anual top-dresing of acid phosphate at the rate of 400 to 500 pounds per acre and large quantities of lime are also applied. The trees are pruned annually; in 1915 they were given a summer pruning. The apples are very carefully thinned. "It is absolutely necessary to thin the Wealthys if you would grow fruit."

The list of varities includes McIntosh Wealthy, Fameuse, Wagener, Baldwin, Congress, Roxbury, Russet, Spy, Salome, Stark, Pewaukee, King, Walter Pease, Twenty Ounce and a few others. The young orchard comand Gravenstein.

There are two advantages in growing a list of varieties that ripen over a long season, although Mr. Geer says that he would not advise planting some of these. The labor of these. The labour of picking and packing is distributed over a long time, which is a decided advantage, while the customers who his fruit can have it on sale for many months.

A new plan of marketing was tried in 1915 and proved so profitable that it has since been continued. Mr. Geer's orchard is located 17 miles from a large city and half a mile from a railroad siding. He was advised to pack his apples in half bushel peach baskets, because the early fruit brough higher returns in baskets than in barrels. The results were so profitable that he packed in this way the greater part of his crop of 1500 barrels, with the exception of about 25 barrels of prize fruit. A good share sold for $1 per basket. The railroad declined to carry the baskets by freight unless more securely covered than with pink netting. Mr. Geer arranged with his commision man to send out his big auto truck and take in a load of baskets at five cents each, the same price that the railroad charged. This saved one handling at each end, as well as cartage to and from the depots.

Push Young Trees by Good Culture

The young orchard has been pushed along as rapidly as possible by cultivation and free use of manure, 25 spreader loads of manure being used. A crop of fodder corn for the silo has been grown.

Fruit growing is not the only business of Mr. Geer. He has kept a dairy of 12 to 15 cows and raised several heifers each year. Part of the cream was sold in a near-by village and the balance made into butter, which was also sold direct to consumers. Three years ago Mr. Geer became interested in poultry and found them so profitable that he has disposed of most of his cows. During the past season he hatched 750 chickens, which were raised in two stove brooders. This year he will carry through 500 laying hens. The eggs are sold at wholesale, but in the spring there is a large demand for hatching eggs for $5 to $6 per 100.

A piece of woodland has been partially cleared for another orchard. Goats were pastured on it for several years to kill out the brush. They killed everything but the sheep laurel and huckleberries. Last spring Mr. Geer thought to try some pigs to root out the remaining brush, but after three of them sickened and died he gave it up and is looking for some other way to clear the land. He attributed the loss to eating sheep laurel. Have any of our readers had similar experience? Mr. Geer's success can be attributed to hard work and persistence, a love for his business, a soil that is particularly well adapted to produce fine fruit and a location near good markets.—By Edwin C. Powell.

FALL AND WINTER SPRAYING

San Jose scale and peach-leaf curl are best controlled by spraying in the fall after the leaves drop. There is ample time at this season to do the work which always comes in the spring when other things are pressing so hard. The weather is good, there is an absence of high winds and the ground is hard and firm.

Fall spraying is much more effective in preventing peach-leaf curl than spring spraying. In fact, where the spraying is put off until the pink shows in the bud it is often too late to prevent the curl.

San Jose scale is active during the winter and continues to draw upon the vitality of the tree. Fall spraying will prevent this and will save many trees which might be dead by spring. The scales are much easier killed in the fall because they are not so well protected by their hard covering.

Peach growers pin their faith largely ti lime-sulphur because it cleans up both the scale and scab. Recent investigations show that Scalecide has some fungicidal qualities which also makes it effective for the same purpose when used as a fall spray.

Many growers prefer miscible oils for spraying trees which are badly infested with the scale. It spreads further than lime-sulphur and will work around the branches, in the crotches and get under the horny scales most effectively. These materials may safely be used at the winter strength as soon or even before the leaves drop. It is more economical of materials to wait until the leaves are off.

SAVING THE LAGGARD CELERY

It sometimes happens, either through neglect, unfavorable weather, or too late planting, that the late celery crop will not bleach up properly, remaining too green to be edible. When this happens, if it be a good keeping variety, it can usually be saved by the following method:

Take a good-sized packing box and remove both bottom and top. Then bury it partly in the ground, banking earth around the sides until almost even with the top. Now take the best stalks of the celery and closely plant them in the earth in the bottomless box, until the box is filled. Then boards are placed on top of the box to make a double lid or cover that sheds the rain, and completely covers the celery.

Buried in this way, away from light and air, the celery will soon bleach nicely. It can be used as desired, and will come through severe cold weather without injury. It should not be exposed to severe frost in the open trenches before burying, as this is likely to cause rot.—(Ed. Henry.

HORTICULTURISTS VISIT FINE FRUIT FARM

Several public spirited Boston citizens placed their automobiles at the disposal of the visitors to the American Pomological Society's Exhibition recently held in Boston, and one of the trips of much interest taken by the state horticulturists of Maine was to the city of Fitchburg to visit the extensive orchards of Mr. Marshall, which are considered the finest in the world.

These orchards consist of nine or ten thousand practically perfect trees, most of them being of the McIntosh Red variety. Intelligent and up-to-date methods of fertilization, pruning, and spraying have been combined to bring about these results.

Since the methods employed by Mr. Marshall are so successful a few words in regard to them may not be amiss. On the older trees, which have been set about 12 years, the sod mulch system is used. This consists of heavily mulching the ground around trees for an area even larger than the tops cover. In addition to the grass and hay thus used, ground bone is utilized, ten pounds to the tree. The price of potash, which was formerly used, is so high that it is no longer practical.

For the younger trees, those of two and three years, a different method is employed, that of cultivation, crops being planted between the rows.

Generous spraying is employed in these orchards. Besides the dormant spray, used before the foliaye appears in the spring, five sprayings are given at intervals during the summer and fall, while the apples are in various stages of growth, and still later in the season, after the apples are picked, the trees are thoroughly sprayed for the seventh time. Since the cold, damp weather of fall is favorable to the growth of scab on the leaves, which, falling to the ground, send the spores the next spring back to the tender foliage, this last spray is recommended as an insurance for the next year's crop. It also tends to hold the leaves later, thus causing the fruit buds to ripen properly for the next season.

Probably the McIntosh Red apple is the most susceptible to scab of any variety known, therefore it is remarkable that on these thousands of trees there is absolutely none to be found on fruit or foliage. So confident is Mr. Marshall of the efficaciousness of this spraying, that the offer which he has made of one dollar for every wormhold found in the calyx of any apple, has been open for years and he has never had to surrender a dollar.

Mr. Marshall's two cold storage plants which take care of this fruit until it is disposed of, are models of their kind. A perfected ammonia process is used, the pumps being run and automatically regulated by electricity.

This fruit is sorted according to size into five different grades. The first grades are marketed in partitioned corrugated pasteboard cartons holding 100 apples. The smaller grades are sold by bulk and marketed in bushel boxes. There are no secords in quality, all the fruit being perfect.

If the same spraying methods used on this Massachusetts farm and the same amount of care were put into our own orchards, Maine, with her great natural advantages of soil and climate would in a few years boast of hundreds of orchards as fine and producing as perfect fruit.

CONSERVATION AND UTILIZATION OF FARM MANURE

(Experimental Farms Note)

All investigation go to show that farm manure has its greatest value when fresh, that the liquid portion is richer than the solid material and that the former is more readily lost through drainage and leaching. Hecen it is that every precaution is taken here to ensure a minimum loss of plant food constituents in the manure and is the chief reason for applying manure to the land, where practicable, as quickly as posible after it is produced.

At the Central Farm, Ottawa, the liquid manure is absorbed by means of litter usually cut straw, and as each load of mixed liquid and solid manure is gathered it is taken directly to the field and is spread on the land either by hand or by means of the manure spreader, as convenient. This method is carried on consistently throughout the year although during occasional winter seasons this system may be disorganized for a time due to the depth of snow or other causes. The contour of the land at this farm varies from fairly level to gently rolling lends itself admirably to the foregoing plan of procedure.

The manure is always applied systematically in definite cropping systems or crop portions. The amount and frequency of application vary according to the duration of the rotation, but, without exception, in the regular farm rotations, six tons per acre of fresh manure is alloted to each year of rotation. For instance, in a three-year system, of hoed, grain and hay crops, eighteen tons is applied for the hoed crop. In four-year rotations twenty-four tons is the quantity used. For a five-year rotation the amount is thirty tons of which the balance is spread in lighter dressings for the clover and timothy hay areas.

Where manure is applied for cultivation or hoed crops the importance of incorporating the manure thoroughoughly with the soil as near to the surface as practicable is closely observed.

GROWING RHUBARB DURING THE WINTER

Fresh rhubarb during the middle of the winter is easily obtained by anyone who has a few spare rhubarb roots in his garden.

Just as the ground is about to freeze at the commencement of winter dig two or three roots, lifting them with as little damage as possible. Put these roots in an outside

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shed or somewhere else where they will freeze solid but will not be buried with snow. After they have been frozen for two or three weeks, take them indoors, put them into the bottom of barrels, filling in around the roots with soil, sand, sawdust or other moisture holding material; set the barrels in the cellar or some other place where there is some artificial warmth, keep the roots dampened, and cover the barrels with a sack to darken the inside.

Under these conditions a root of rhubarb will grow almost as many shoots as it would during the next summer, and by darkening the atmosphere the shoots will be tender and well blanched. The amount of earth surrounding the root is not very important, as the growth is largely independent of any feeding upon the soil, the material for the shoots being taken directly from the stored food in the roots.

When spring comes the roots may if desired, be again planted in the garden; but they will be so well exhausted as to reqhire abodt two or three years to come back to their normal condition.

WINTER INJURY TO PEACH TREES

The winter injury which peach trees frequently suffer may appear in several different forms, some of which are quite common while others are less common but of far greater significance. The fruit buds may be killed, the branches and twigs may be killed, or the roots may be killed. One should be able to discern these differences for the results in each case are of different consequnce. Bulletin 241, of the Ontario Department of Agriculture, discusses these three forms of winter injury as follows:

The first form is most noticeable because it is marked by a small crop, or the total absence of fruit. This form of injury is caused most largely by a very sudden drop in temperature, following a warm spell in winter, such as occurred in January, 1914, or sometimes the first farm days of spring having opened the buds the blossoms are exposed to frost or cold, adverse weather conditions late in the spring. Cultural methods are of little avail in such cases, except in so far as good cultural methods tend to keep the trees thrifty. A site for the orchard that is not subject to these conditions is the best insurance against loss.

The second form of winter injury, viz., the killing of branches or twigs and possibly the blackening of the hearts of the main limbs and trunks is more readily guarded against. This injury is most common in over-cultivated orchards, over-pruned trees, or under any conditions where soft, sappy growth has been produced. The remedy lies in more judicious cultural methods that would tend to keep the tree vigorous and healthy, but not overgrowthy. The slower growing and slower maturing trees are the most resistent to cold.

The third form, root injury, may be due to a number of causes. Peach roots cannot withstand excessive moisture. Roots in a poor soil lacking in humus suffer from deep freezing and are themselves weak from want of food. This form of injury can be detected by the behavior of the tree in early spring. It may begin to leaf out and even open its blossoms, but in a few days begins to lose color and in a time, ranging from a few days to mid-summer, gradually but surely die. It is expected that the trees are budded on the most hardy roots obtainable, because beyond this there is no insurance against loss except the removal of surplus moisture by ridging up with the plow in the fall and the prevention of deep freezing by mulching with farmyard manure. A cover crop that holds the snow is an insurance against deep freezing. Judicious cultural methods are again the best form of insurance.

When pruning young pear trees, thin out any limbs that cross or interbranches that will at a later date form the framework of the tree. Cutting-back or heading-in is not considered advisable. This may be neccsary in exceptional cases in order to properly form or balance a treee, but it should be done out of extreme necessity only. A bearing tree is less susceptible to blight but even here it is considered advisable to reduce pruning to a minimum. A little pruning regularly, March and August, might be considered a reasonable rule.

LEAVES A NEGLECTED FERTILIZER

There are thousands of tons of humus-forming fertilizer lying neglected in our woodlots, especially in the sugar maple woods—leaf mold which gathers in the low places sometimes six to 10 inches thick. The dead leaves have accumulated through many seasons and some of the nitrogen has of necessity leached out, but very little of the mineral plant foods. This soil-building material does not incorporate with the soil so quickly as stable manure, but contains all the necessary elements of plant food. It is easily handled when moist with either a spreader or manure fork.

I have 20 acres of dense sugar tree woods where the ground was matted with leaves so deeply that not even weeds would grow. Last season this was taken up and spread on an adjacent upland field to be planted to corn. The mold was generously applied and plowed under. The corn stood the drouth much better than the crops in the bottoms. After the ground in the woods was bared it was sown to orchard grass which grew luxuriantly. Thds a benefit was derived in two ways.

Time could not be more profitably spent than in hauling this natural fertilizer to the fields when the farm work is slack.—(W. L. Cumback.

LITTLE PROFIT IN DRUG PLANTS

Unless you are content with a wage of 50 cents a day don't monkey with Horticulture U gathering the weeds that grow wild and are valuable for medicinal purposes. A special committee of the Philadelphia society for promoting agriculture appointed to investigate the cultivation of drug plants reports that it is a precarious business which holds out promise of profit only to those who have learned it. Most people are ignorant of the market and of possible purchasers. The labor cost of collecting weeds appears almost prohibitive.

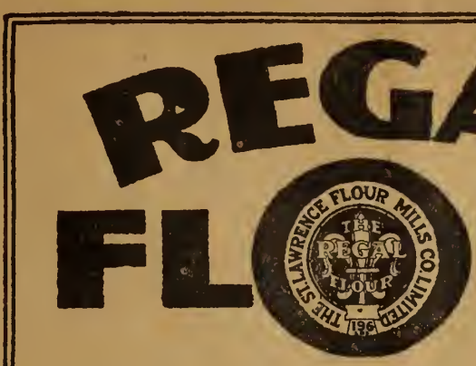
A PEAR OF HIGHEST QUALITY

This is a popular and profitable pear in many localities. Because it is necessary to double work the trees they cost more than other varieties, and on this account have not been planted so largely. The pear is large in size, rich golden russet in color, and surpassed in flavor by few others. The fire blight, which is so destructive to many varieties, seldom attacks this tree. They need careful pruning and training to make a shapely tree.

CULLED FROSTED POTATOES

Sort potatoes and remove frosted ones before shipping as a few of these in a sack may ruin the entire sackful during shipment. Potatoes, labor, freight charges and car space will be saved. The frosted potatoes may be used for stock feed. Potato growers are urged to market their potatoes throughout the year. An even flow of the crops through the channels of trade will aid in stabilizing the market and prevent waste.

REGAL FLOUR



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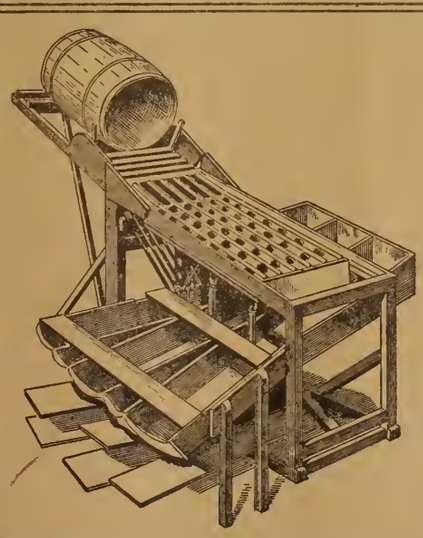
JAN. 15th, 16th and 17th, 1918
This annual Convention is the one big Horticultural meeting of the year and no doubt will be largely attended.



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DAIRYING.

DAIRY SIRES THAT ARE CHEAP AT ONE THOUSAND DOLLARS

One of the most puzzling problems confronting dairy farmers and breeders of purebred dairy cattle is that of how large an investment it is safe to make in a breeding bull. With purebred bulls selling at prices from $50 to $25,000 and upward it is well for one to make a careful study of what constitutes merit in a breeding bull, before investing in qualities that are not apparent to the eye.

Since heavy milk production is not a natural, but an acquired characteristic, it is only by constant selection that this quality can be retained and intensified. Unless the breeding bull has inherited heavy milking qualities through his female ancestors we have no evidence that he will have the ability to beget daughters that will prove superior to the cows with which he is mated. In order to retain the milking characteristics of a good grade herd, it is necessary to use a bull that has inherited these characteristics to a stronger degree than the cows. This makes it imperative in all herds where progress has been made in raising the average milk and butter fat production, that the sire be selected with great care, especially regarding the milking qualities of his nearest female ancestors.

Almost any purebred bull that can be purchased for $100 will improve the milking qualities of a grade herd, but for the more highly developed herd it is much more difficult to select the proper bull. Breeders of high producing dairy cows recognize the importance of selecting a bull that will transmit the acquired milking tendencies to his ancestors to the fullest degree. These breeders are always ready to make use of breeding bulls that possess the ability to strengthen the blood lines in their herds and exert prepotency toward uniform offspring and dairy qualities. Price is of small consideration when they find a bull that combines the qualities needed to bring about the desired improvement in their herds.

Where so many dairy farmers have apparently failed in the effort to build up their herds of grade cows was in, after seeing the great improvement of the first cross with satisfaction and attaining with the second cross much less results than were apparent from the first cross, abandoning all future efforts to grade up. The first cross of a pure-bred sire on account of the much better quality of the sire, if a proper selection has been made and his greater prepotency, is apt to be very striking. Such a sire will exert much more than fifty per cent. influence and the dam much less than fifty per cent. upon the progeny. While in the first cross there is existing a wide difference between the quality of the purebred sire and the quality of the common bred dam, when it comes to making a second cross the difference between the half-bred dam and the purebred sire is much less, and the three-quarter bred stock will show much less improvement over the half-bred than the half-bred cows over the common bred cows. Hence many dairy farmers are apt to conclude that it is hardly worth while to pursue these lines of breeding any further if they are not to get the same results with each cross, and right here the mistake is made of stopping improvement. The results are being attained as rapidly as possible, but are not so apparent from year to year. When the process of breeding up through the use of improved sires is abandoned the tendency is for production to go backward.

Right here is where the importance of selecting better sires is apparent. It would be important as well as interesting if we had the results of definite experiments to guide us in our breeding efforts. What would be the probable results of mating a bull from a line of dams capable of producing from nine thousand to ten thousand pounds of milk per year with common bred cows capable of producing five thousand pounds of milk per year, and what effect on the progeny would result from using a sire with breeding capable of producing five hundred pounds of butterfat with cows capable of producing two hundred pounds of butterfat? Such data, if only approximately correct, would give us more accurate figures to base our estimates of breeding values on and prove of great value in determining prices that one could afford to pay for breeding bulls to carry out his ideas of improvement. While the experienced breeder of dairy cattle realizes the importance of using a sire that is superior in inherited capacity to his cows the average dairy farmer does not give the question of the selection of a sire the attention that the importance of the question demands.

The process of breeding up a herd of dairy cows to a high annual standard of production depends upon using breeding bulls that are superior in inherited dairy capacity to the cows with which they are mated. As the cows reach a higher standard of production the problem of selecting a better bred bull to mate with them increases. As a rule, the better the cows in the herd the more one is safe in investing in an improved dairy sire.

The returns from an investment in a purebred breeding bull will depend very largely on how the investment is increased. Perhaps if you have a number of cows that have made creditable milk and butterfat records an investment of many thousands of dollars in a purebred bull may prove profitable. Provided he is given good care and an opportunity to transmit his good qualities through some of the best cows of the breed you may increase the investment until he becomes far more valuable than can be computed in dollars and cents. So much depends upon how the investment is increased that it is difficult to advise how much one is safe in investing in a purebred sire. The Holstein-Friesian breeder who paid $25,000 for Ray Apple Korndyke 8th is increasing his investment through buying many of the best cows of the breed, conditioning them for high records, mating them with his famous bull and selling some of his young bull calves for from $2,000 to $20,000. Such returns would not be possible had he used him with only a few good cows and waited for years before increasing his investments in superior blood. The breeder must have thusand dollar cows before he is safe in investing in thousand dollar bulls and the dairy farmer must have high grade cows before he is safe in investing in bulls that cost him more than from $100 to $200. Provided he has a few purebred cows to increase the investment he may be safe in buying a better bull, but it is unwise to invest too much in a bull until some of the cows in the herd begin to make creditable milk and butterfat records.—C. B. F.

IN SUCCESSFUL FARMING.

FEEDING THE COW ON TEST

Individuality Must be Studied....

In reply to an inquiry re how a cow should be fed and managed for a seven and a fourteen day test, the Ottawa Valley Journal says:—

There are no hard and fast rules that will always apply to cow-testing. There are some general principles, however, that, in the main, are applicable but even with these the cow will not always agree, but demand something especially for her own benefit; hence in a large measure cow-testing has come to be regarded as an individual matter.

A dairy cow cannot be regarded simply as a machine for making milk. She is that, in the sense that she is able to transform the raw material of the farm into one of the most delicious, valuable and indispensable articles of food for man and beast, that is to be found upon the face f the earth, but she is vastly more than that; she is a living force, possessed of a strong nervous temperament which is capable of being influenced by many considerations.

It should be understood that there are four main centres of activity in the dairy cow when she is performing her milk functions; the digestive system, the milk secreting system, the circulatory system and the nervous system, all of which should be considered at all times, but more especially when she is undergoing the pressure and strain consequent upon the practise of cow testing. It will readily be seen from these considerations that feed is not the only element that influences the milk yield and butter fat content of a cow's production, but that anything that disturbs the equilibrium of these functions reacts to the disadvantage of the cow in every direction, therefore the first consideration in testing for milk and butter fat production is to maintain the balance of all the organs by proper care and management so that each will contribute its full share toward highest development and not be, in any sense, a brake upon the other organs of production.

There are still many who think that a cow should test the same at every milking. They will do this, however, only when long periods of time are included and when conditions are similar, and even then there will be unaccountable experiences of variation. It is true that a high-testing cow will always test higher under the same conditions than will a low testing cow but even in this there will be occasional exceptions. As is well known by experienced feeders, a cow subject to various annoyances, such as the irritation of flies, or excitement caused by dogs will drop in her butter fat test; unless a cow is protected from these abuses no good testing can be

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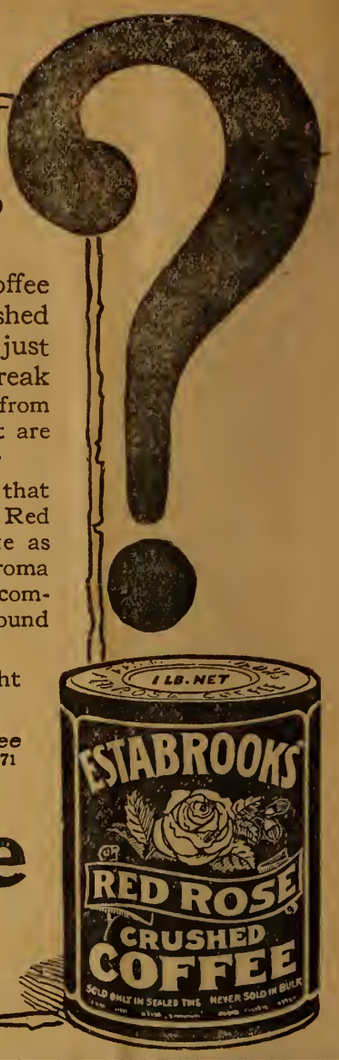

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accomplished at certain times of the year.

The feeder in his endeavor to get a high test frequently treats the cow in the wrong way. At fairs where milking contests for short periods are carried out it is not always the best cow that wins the contest. Many high testing cows owing to exciting or abnormal causes, to change of rations, increase of food, etc., suddenly fall off in their test while at the same time they hold in their quantity fairly well. On the other hand some ordinary or even low testers increase in their test materially. Owing to this fact the poorer cow frequently wins and the normally best cow fails. Usually the feeder is at fault. Experience teaches that any increase in food should be made very gradually. Where a cow has been on heavy rations the safer way is to cut down the amount of feed and let the smaller amount be in the form of concentrated protein. This protein is easily digested by the cow leaving the blood free to travel to the udder. Fat which is placed in the milk, is not taken from the food that the cow eats during that day, but is contained in the blood or is taken from the cow's body fat.

The temperature of the body has much to do with the fat in milk. Some increase it by blanket-sweating or drugs. This is wrong and forbidden by the breeders' associations. The fat may also be increased by careful feeding; not to any considerable extent, however, by the kinds of feed but to a much greater extent by the quantity and manner in which they are given. Too heavy feeding, thus keeping the digestive organs crowded, the blood tardy and overloaded, and the nervous system depressed, is bad practise. Just enough feed should be given to carry a cow to her limit without forcing, thus will all the organs be able to perform their functions naturally.

No general rule for feeding can be given that will be suitable for every cow in a herd. Cows are individuals and must be treated as such for best results. One pound of meal concentrates to four pounds of milk will be suitable for one while another may give better results on a ration of one to three. Some cows like one kind of feed better than others. They should be humored in their whims, if whims they be, but it may be that they are better judges of their needs than their feeder.

One of the most important factors influencing both the quantity and the quality of a cow's milk is the condition she is in. One pound of grain when a cow is dry is worth two pounds after she freshens. The principle is the same as in other phases of farming. If one wants to grow a good crop of grain he does not wait until the crop is sown before making preparation and putting his land in the best condition. The cow that is fat when she freshens has the same advantage over a thin cow that the seed sown on good soil has over that sown on poor land. It is now well known that a cow will give a higher fat content in her milk when falling off in condition and a lower test when gaining in flesh. If a cow is fat, therefore, at freshening, she will have an opportunity to secure the best results in the following lactation and should be fed so that she will decrease slightly in weight as her milking period advances.

Some breeders fear having their cows in a fleshy condition at freshening on arcount of the danger of milk fever. This need not cause any alarm however, if the cow is properly managed at that time. The cow should be on full feed the same as when milking until about ten days before threshing. Then a bran mash and other laxative feed should be given instead of heavy grains, and continued until four or five days after calving, when the udder should be soft and in good condition. Then with care in milking only small quantities from the udder for the first two or three days and at no time milking her dry at this time all danger of milk fever will be avoided. If at the end of five or six days the cow's udder and general condition are all right the feed may be gradually increased until the cow is on full feed at ten to fifteen days after parturition.

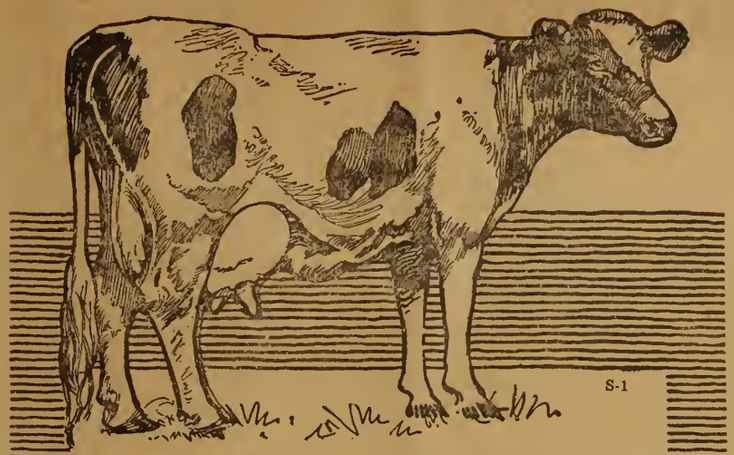
Regularity in feeding and milking is of the greatest importance. If a cow is not fed and milked on time she becomes uneasy and nervous and in some measure is shocked at the delay, which operates against the highest success. The time between milkings should be evenly divided and where more than one is to be milked by the same person the same order should be observed at each milking. Fat in milk is also influenced to some extent by the time between milkings. It is also advisable that the same milker should milk the same cows every time. Some cows manifest a decided preference for certain milkers. Where this is the case better results will be obtained by the man of her choice than where her likes are disregarded.

Some testers turn their cows out on to fresh grass when beginning a record. This is usually not a good plan. A cow will almost invariably increase her flow but almost always at the expense of her test. Grass is cooling to the system and as bodily temperature increases fat, grass operates against it. Cold water has the same effect and should not be given until the chill is taken off.

After all is said that can be suggested on testing the fact remains that the feeder is the biggest factor. Nothing will take the place of his study of the individual cow and the over-ruling of all things for her particular benefit.

If one uses a variety of feeds, it is possible to force the young pigs along and obtain desirable results. If the pigs have an opportunity to exercise while eating grass or other coarse feeds, like rape, clover, or garden weeds thrown to them, they can be fed a liberal quantity of a variety of grains, such as part corn and part millfeeds, with excellent results.

For several days after freshening the cow should receive special attention, such as being given a reasonable amount of warm water to drink, bran mashes made of two pounds of bran, a pound of oats, a pound of oil meal and a handful of salt, and a little good hay. She should not be given cold water within three days after freshening.



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LIVE STOCK.

BRONCHITIS AND BRONCHO PNEUMONIA IN THE OX

The parasitical form of bronchitis or husk will not be alluded to here, but only two forms, and although one form is probably due to various micro-organisms, yet both, it will be assumed are "mechanical" and produced by exetrnal causes only. Each of the two bronchi (the terminal branches of the trachea) resembles a tree imbedded in the substance of the lung; each bronchus enters the lung of its own side, diminishes in size and finally ending in little sacs or air-cells suported by elastic tissue, and carrying the capillaries of the ultimate ramifications of the pulmonary artery: thus the blood in these capillaries is exposed on both sides to the air. The expired aid, whatever the temperatufe of the extenral air, is nearly as hot as the blood, and however dry the external air, the expired air is nearly saturated with watery vapour. Air which has been breathed once loses roughly 5 per cent. of oxygen, but has gained 5 per cent. of carbonic acid. There is also given forth by expilation a greater or less quantity of matter of a highy decomposable character.

An ox in health breathes about twelve to eighteen times a minute, the pulse numbers from forty to fifty per minute, and the temperature varies from 101.5 to 102.5. Although mechanism, physical and chemical, that takes place in respiration is somewhat complex, yet we can arrive at two true conclusions, viz., (1) that abundance of fresh pure air (not that contaminated with exhalations from decomposing dung and urine) is necessary for the maintenance of good health, and breathing for many hours a vitiated atmosphere results in ill-health, and (2) that the air tubes and their terminal bronchial divisions are very susceptible to atmospheric changes by reason of the great sensibiity of the mucous membrane which constitutes the walls. Hence the comparatively frequent occurence in the ox of bronchitis, acute or chronic.

Acute bronchitis is recognized by increased respirations—the inspirations being difficult—wehreas the pulse beats are much increased; the animal does not flinch upon pressure being applied to the sides of the chest as it would do from pleurodyne, neither does the patient look at its sides as it would do if suffering from pleurisy. The cough, however, comes on in paroxysms, is frequent and distressing, owing to blocking up the air tubes with mucous. One notes that the visible mucous membranes are lead-colored owing to imperfect oxidation and the results may be serious, such as suffocation from complete blocking of the air passeges or from extension of the inflammation to the lung tissues generally.

The air passages possess ciliated epithelia, and these vibratele cilia are so to speak, the brooms constantly acting in sweeping and forcing forward mucus and foreign particles from the bronchi to the mouth or nasal chambers; the long flexile tongue of the ox sweeps clear the lower part of the nostrils. Some of the particles are dropped to the ground and part swallowed.

Treatment

Put in a comfortable loose box where a free supply of pure air is obtainable, giving tempting food and varied, to keep up the patient's strength, and if the weather is cold the body should be clothed in sacks with a thin layer of straw between skin and coverings. Some white oils or turpentine or mustard may be rubbed in occasionally on course of windpipe and sides of chest. From the difficult and distressed breathing do not attempt drenching. Give the following medicine, one tablespoonful smeared on the inner side of the lower molar teeth three or four times a day; Two ounces each of powdered chlorate and nitrate of potash made into a stiff paste with honey or treacle. If the appetite fails and depression is severe incorporate a dram of sulphate of quinine in the above quantity. Offer frequently cool fresh water. The bowels are sure to somewhat inactive, but do not give laxatives or cathartics, though enemas of soap and water will answer all purposes.

The breathing will be relieved the stringy, thick mucus made thinner, and a general curative effect helped by medicated steaming once or oftener during the twenty-four hours. This can be provided by the means of an ordinary quart tea kettle, the water kept boiling by a lamp and the spout fitted with a length of rubber tubing in which is inserted the terminal fan-ike nozzle of a water-can; the steam thus diffused can be admitted to about eighteen inches of the animal's nostrils and kept there for ten minutes at a time . After once using, the medicament in the kettle must be renewed. The following forms a valuable inhalent: Half an ounce each of Friars' Balsam, oil of eucalyptus, and turpentine. In the course of a fortnight, with good nursing and attention, the breathing should become natural, the appetite and rumination return, nasal discharge watery, and the cough less frequent.

It is a noticeable fact that the ox when suffering from lung affections often remains in the recumbent position, whilst the horse persistently stands under similar circumstances. This can be accounted for by the differences in the anatomy of the ox and the horse; the former has only thirteen ribs and the horse has eighteen, but the posterior ribs of the ox are longer. The flat sternum of the ruminant permits repose on the interior surface of the trunk, and owing to a synovia union this position leads to lateral expansion of the chest.

Chronic Bronchitis

is a sequel of the acute form, and the symptoms are a pesistent cough, debility, shortness of breath when undergoing unusal exertion, and loss of condition. These symptoms may also suggest tuberculosis, and it may be necessary to test with tuberculin. Treatment consists of shelter from cold winds and rain, a dry floor with plenty of litter, generous feeding, and tonics. These will do much, but when the disease is confirmed, slaughter is probably the best course. Mechanical bronchitis and

Broncho-Pneumonia

is usually caused by careless drenching. Oxen are so much easier to drench than the horse that the operator forgets the possibility of some portions of the drench entering the larynx and the trachea. Drenches should be administered slowly and in small quantities at a time; the head not held too high or turned on one side, and the act of coughing should warn that the head is too be dropped at once, and time given before proceeding further. All irritating drugs should be well diluted with a sufficiency of bland fluid, such as oatmeal gruel, etc. In lung troubles and acute tympany do not drench. If the quantity "gone the wrong way" is large death may ensue in a few minutees from suffocation, but usually in about forty-eight hours broncho-pneumonia with dyspnœa will supervene.

Chronic Cough

This so frequently occur in cows without any signs of ill-health, and though in this article acute diseases causing coughs must be omitted, and also the cough arising from tuberculosis, there are other causes that may be mentioned. As seen in this article a cough may be left after an attack of bronchitis following catarrh, and this may perhaps be the commonest type, the cough being loose and mucus often coughed up. Any little exposure to wet or cold increases its frequency.

A cow that has had a slight attack of pleurisy that may not have been diagnosed has often a cough due to some adhesions to the lung.

The ordinary catarrh affecting the throat and larynx, such as sore throat would hardly be recognized unless a cough.

But we must not forget that a cough very bad, and this may terminize in is one of the symptoms of tuberculos which may not seemingly affect the health of the animal.

Treatment is difficult owing to the various causes, and it is not convenient to keep the cow in byre or more comfortable uarters for so slight a trouble. Try to find out if there is any irritability of the throat, and if so some white oils well rubbed on throat every second night will soon relieve it.

If from bronchial trouble an ounce dose of paregoric mixed in a linseed mash every night for a week would alleviate the coughing, but exposure to wet or cold would probably bring it back again. So the best treatment is hygenic—well ventilated byres, sunshine and fresh air, and clean, dry floors, whilst the dung heap should be as far removed from the byres as possible.

In young stock there is always a probabilaty of husk but this is a specific disease and requires different treatment.

M. R. C. V. S.

BEGINNING WITH SHEEP

As boy and man, I had the care of sheep on a New England farm for a great many years. Because of my long-time interest in the business, and my belief that its development would be a great benefit, not only to the men who keep the flocks, but also to the section in which they live, I would like to make a few suggestions to prospective beginners.

Among the things which they will be wise to do are the following:

Provide suitable quarters for the sheep and for the lambs which they are expected to bring forth. These places should be so arranged as to give full protection from storms, and from enemies of all kinds, and to promote the health and comfort of the flock. Special attention should be given to furnishing a safe place for the lambs. Arrangements for feeding and watering should be made with reference to the wants of the animals and also to the convenience of the man who will have charge of the flock. And these things should be done before the sheep are brought to the farm.

Get good stock — Because of the limited number of animals from which he can choose, the buyer may not be able to obtain just what he would like, but he should get the best that he can, both as regards the breed and the qualities of the individual animals. It will be extremely poor policy to buy a low grade stock if anything better can be secured.

Begin on a small scale—This is a good way to start in any business. It is highly important to one who is about to engage in the sheep industry. My father commenced with one lamb which was given him by a neighbor who did not want the trouble of raising it by hand. In a few years he had a fine flock.

Read books and articles in farm papers on sheep and their management; also, if possible, visit some of the farms on which sheep are kept, and observe how their owners have arranged and furnished the barns or pens, and how they feed and care for their flocks This wil enable one to start in the business intelligently, and thus it will be a great help toward making it a success.

The outlook for the sheep industry in the eastern states is good. It is true that, for various reasons, a good many farmers cannot engage in it at once, or even in the near future, but there are a great many others, who are more favorably situated for it, to whom it offers an excellent opportunity for interesting and profitable effort. It will be well for such men to take up this work promptly, and with the intention of making it a permanent part of their farm business.

J. E. R.

CONCERNING VEAL

The questions have frequently been asked: Why has not the food controler prohibited the use or veal? Is it not an economic waste to kill the young animals?

"These queries bring up several very debatable points," says a bulletin from the food controller's office. "There is no doubt that it is good business to bring to maturity such calves as give promise of converting their feed into profitable beef or into profitable dairy products. But it lessens the farmer's output of milk and butter and his supply of feed to no purpose when poor calves are kept. Very often calves give no promise of rendering returns either in beef or milk. Thus male calves of dairy strain, that cannot by any chance be expected to yield economical beef as steers, bring net profits only when slaughtered as prime veal.

"To get best results from any herd, a certain amount of weeding out, particularly among the females, is essential. Only thus can the beef possibilities and the milking qualities, respectively be maintained and improved. It may be remarked here that the majority of veals slaughtered are males from dairy herds.

"It is evident then, that the consumption of veal could not be prohibited yithout entailing present loss, unprofitable feeding, and future deterioration in the herds.

"Strangt to say, although nearly everybody has eaten veal, and Canadian householders have bought and handled it for generations, few, very few, people know even approximately how to define it.

"A calf to be classed as prime veal should not be younger than four weeks nor older than eight weeks. Also, although the beef veal calves are of beef breed, yet, when well fed and well prepared, the dairy-breed calf makes excellent veal. As a matter of fact, the greater part of Canadian veal is from dairy stock.

"A prime dressed veal carcass weighs 65 to 70 per cent. of the live weight, whereas, incidentally, a good beef carcass runs only 55 to 59 per cent. Ordinarily, the weight of a veal calf ranges between 100 to 200 pounds; but the choicest weight lies between 120 to 160 pounds.

"Veal should be eaten fresh. The best cuts come from the hindquarters. The brains, tongue, heart, liver and lights, are valuable and delicate foods. Sweetbreads, two glands, one near the base of the throat, and the other near the heart, are found only in calves that have been fed exclusively on the mother's milk. They begin to disappear as soon as the calf is put on grass or solid food.

"From 150,000 to 180,000 calves are marketed in Toronto annually; and from 350,000 to 380,000 in Montreal. More than half are received during March, April, May and June. Except in decennial census years it is improcticable to determine the number of veal calves killed outside of the large stock yards.

"The production of veal is looked upon as entirely subsidiary to the output of beef and of dairy products. Veal is essentially a by-product of the beef and dairy industries. No greater mistake could be made than to regard it in any other light. To illustrate this we may cite the fact that out of lots of 43,342 calves received at Point St. Charles, Montreal, this year, 9,400 could have been matured for beef. The same

was true of 8,914 head out of 34,031 calves arriving in Toronto. Taking then the average of 22.6 per cent. at least 113,000 calves of a total of about 540,00 arriving at Montreal and Toronto throughout the year should not be slaughtered as veal. The problem thus narrows itself down to devising some methods of saving this 22.6 per cent.

"Summing up, briefly, it is good business to cull out and 'veal' calves of either beef-breed or dairy-breed, when it is clear that they will add nothing to the total wealth of the country."

FRAUDULENT OLEO RIGHTLY FEARED

(Chicago Dairy Produce.)

The dairymen and the allied interests of Canada are beginning to wonder if they haven't, in the introduction of oleomargarine into their country, got something that is going to give them considerable trouble to manage. Speaking from years of experience, we wish to assure our neighbors that the history of the sale of this product up to the present time, has been one of deception and violation of law.

The great trouble has been that some of the largest manufacturers of the product, when it first came upon our markets, found considerable difficulty in getting the consumers to buy it in its white or natural color. They wanted butter; and, as the field for the sale of oleo, was large and inviting for the perpetration of fraud, hundreds and thousands of small places were opened all over the country. These were occupied by unprincipled tradesmen and the hunters who peddled the goods direct to the consumer. They would buy direct from the manufacturers of the product five, ten, twenty-five and even one hundred tubs, take it to their back rooms or basements and rework and color it and sell it to the consumer for butter. Millions of pounds of it was sold to consumers annually in this way.

But the dairy interests were not asleep. The enforcement of the oleomargarine law, the passage of which was secured by the National Dairy Union, was entrusted to the revenue department, because it is a revenue measure; and as that department is purely a money-making department, for a long time little attention was given to its enforcement. Urged on, as they were, by the dairymen, they were forced at last to look after violations of the law, and convictions were obtained until our penitentiaries were well supplied with these criminals. Many violators of the law are still behind prison walls for their persistent disregard of the law, and some of the largest manufacturers are still under indictment, and a few under prison sentence, but have managed in some way to put off enforcement of their sentences.

This has been the history of oleomargarine since its inception. It seems to have been BORN IN FRAUD, and its existence perpetuated in the same atmosphere. Had the product been good and wholsome, why the necessity for this deceit? Why the constant struggle to sell it for something it is not? Why did they not come out and sell it for what it really was?

At one of the hearings held in Washington, D. C., one of the largest manufacturers made the statement that he realized the greatest mistake they had made was in not introducing and selling oleo for just what it was.

We believe that the awakening fears of the dairymen of Canada are well founde, and this belief is based upon a personal contact with the record of oleomargarine in this country for over twenty years.

Did the green-lice get your potatoes or did you get them? Those who sprayed thoroughly and in time with tobacco extract saved their crop. Be prepared for another year.

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THE HORSE

WINTER CARE OF FOALS

The advice given in this article is intended more especially to help the young farmer in the matter of how to feed and care for his foals during the first winter, so as to get the largest mount of profit from them—a problem that many a small farmer, who is just starting in the business and is raising one or two foals a year, has studied hard to solve.

The first thing to decide is whether or no the foals are to be trained to compete for any of the rich futurities or are to be kept on the farm, running at pasture during the summer months each year, and not offered for sale until matured and ready to use as roadsters or all-purpose animals. Those that are to be trained and raecd young will require different threatment to those that are to be raised on the farm.

Feed

The later class should have as comfortable quarters as the former, and as great care should be used to keep them free from lice and worms and their feet free from thrush. They should have all the early-cut, well-cured ahy that they will eat, but their daily grain ration should be less than that of the foals which are to be trained young. A pint each of sound clean heavy oats and sweet wheat bran mixed for one ration, and three rations a day at regular hours, morning, noon and night, which will be one and a half quarts each of oats and bran a day, in adition to all the good hay they will eat, should keep a foal in thrifty condition. A large spoonful of flaxseed meal should be added regularly to the night ration.

It will be an advantage to feed this ration once a week at night in the form of a well steamed mash. Put the ration in a pail pour as much boiling hotwater upon it as the mixture will absorb; when swollen stir so that every part of it will become moistened, then cover the pail closely with several thicknesses of blanket or anything that is convenient, which will prevent the escape of steam; set by the stove and let it remain several hours, and feed warm.

Feeding Apples and Potatoes

It is a good plan for the small breeder to teach his colts to eat raw apples, potatoes and carrots, and feed one or two a day of either. Horses and colts are very fond of apples, especially sweet ones, and it is but little trouble to teach a colt to eat them. The apples and potatoes should always be either sliced, quartered or halved before feeding no matter how small they may be, so as to avoid danger from choking. It may be necessary to wash the potatoes and cut them into thin slices or small cubes and sprinkle fine sugar upon them in order to induce the colts to eat them at fist, but they will soon eat them without the sugar. Some farmers teach hteir weanings to eat crushed sugar which comes in lumps, or cut loaf sugar, and t is a very good idea, for there is no more convenient or economical method of giving liquid medicine in small doses than to drop it on a lump of sugar and feed it to th colt. It will be eaten readily and not a drop of the medicine will be wasted.

It is doubtful if any feed will cause more rapid growth in colts than cow's milk from which the cream has been removed. Colts are easily taught to drink skim milk, and when one learned they will never refuse it as long as they live. Practical horsemen, however, are sometimes prejudiced against cow's milk as they believe it has a tendency to cause puffy joints and flabby musces.

Air and Light

It is as necessary that foals have an abundance of pure water as it is to feed them liberally. They should be watered at least three times every day and should be given plenty of time to drink. The stalls should be well ventilated and well lighted. The man who attemps to raise colts in a damp, dark stable will not find the business profitable. When it is possible to do so have the stalls on the south side o fthe building and furnish with glass windows that will admit sunlight, but so securely protected that the glass cannot be reached by the colts. Pure air is as essential to health as pure food, and sunlight is a valuable tonic.

All excrement, liquid and solid should e removed from the stalls morning, noon and night. To prevent offensive odors, sprinkle the floor occasionally with gypsum or air-slaked lime. It is also a god plan to spray the floors and walls occasionally.

OATS FOR COLTS

Those who raised an abundance of oats, cut the crop at the proper stage of ripeness, threshed under faorable conditions and stored the grain clean and dry are indeed fortunate. There is no better grain for ivestock than oats. They yield well as a rule, require little expense for production under anything like favorable conditions and animals relish the grain.

In comparison with any of the grain rations for both mature horses and colts. There is no other grain so safe to feed from and from which such satisfactory results are obtained. Livestock experts strongly advise however, that it is absolutely necessary that the oats be clean and entirely free from mold in order to obtain best results in feeding to colts. "Musty" oats are dangerous for colts.

A fair allowance of oats for colts after weaning is as follows:

Up to one year of age, from two to three pounds daily.

From one to two years, four to five pounds daily.

From two to three years, seven to eight pounds daily.

The best way to fed oats is in the whole grain, the expense of crushring not being justified unless colts suffer in teething, in which case it is advisable to feed steamed crushed oats, which are very nourishing and appetizing. It is always wise to feed plenty of roughage to growing colts. Feeding concentrated feeds in excess is discouraged, as it is important that the digestive trac be developed by distending it during the growing permay annoy the feeder, but this condition always disappears with maturity.

Proper feeding of colts should always be accompanied by plenty of outdoor exercise for the young animal. In no way can a colt be ruined so easily and surely as by liberal feeding and lack of xercise. Close confinemen and the raising of good colts do not go together.

WINTER CARE OF STALLIONS

The care of the stallion during the winter may make or mar his future. An astonishing large number of stallions die each winter, many being young, mostly between the ages of 5 and 10 years. This is much below the natural age limit. It may be true that they are contributing causes, yet we must recognize that faulty care and management are the most common causes of early death amongst stallions. Since improper care is causing many valuable stallions to meet an untimely death it is plain that a large number of others are being seriously and permanently injured by the same undesirable conditions.

Fortunate is the stallion that works every day. No other farm animal develops such a surplus of energy and there is no means so suitable for getting rid of that surplus as hard work in the collar. Every horesman knows of instance worked with results entirely satisfactory. Oftentimes two stallions are worked together as a two-horse team. The temperament of the stallion has much to do with the ease with which he may be worked. A bigger factor, however, is that he he put to work before he is spoiled by misuse. A draft stallion on a farm might well replace an animal in one of the farm teams during late summer, fall and winter and it will be infinitely better for him. Many men hesitate to put their stallions to work because it would be necesary to entrust them to unreliable hired help. There are often other reasons why it is impracticable or impossible to work the stallion. Nevertheless more and more stallions are going into harness and so increasing their value both to their owners and the comunity.

Exercise is an absolute necessity for the stallion. If he is not worked, then some means of allowing him to exerise must be provided. The value of any man's time is too great to allow him to exercise his stallion during the day by leading or riding. Practically the only thing left is to provide a large open pasture or paddock, the larger the better. The greater amount of freedom the stallion has the more heathy and rugged he will be.

I have seen on a ranch in Wyoming two large stallions running loose in the same 5 acre pasture. They played together as other stock might and frequently were seen chewing each other's shoulders, just as geldings do when turned out to pasture on Sunday morning.

One of the worst forms of treatment is to put the stalion into a dark box-stall and keep him closely confined without exercise and away from other horses. The famous Black Hole of Calcutta, into which prisoners were crowded to meet their death through suffocation, has its parallel in thedark and gloomy box-stall in which thousands of stallions meet death every year.

Stallion-owners and keepers who have marked success in wintering their animals give careful attention to feeding. They reduce the feed practically in half as soon as the season is over. If the stallion is not being worked he needs feed only for maintenance. A half ration of grain and half the usual amount of hay ordinarily is quite enough. With less feed the stallion will remain more healthy and rugged and will be less subject to ills of various sorts, some of which might lead to serious consequences. The plain farm feeds in a mixture will make a ration that he will elish most. Of ourse it is to be expected that all feeds will be of the best quality. Condition powders and condiments are not found in the barns of the most sucessful. Pure water is neessary in unlimited quantities. Salt must not be neglected. It may be supplied in a small box at the side of the stall where it may be reached at any time, or it may be fed in small amounts at frequent intervals.

Feet and limbs require careful attention. Clean stalls and plenty of fresh bedding re necesary if thrush and scratches are to be prevented. With these two troubles an ounce of prevention is worth a great deal more than the pound of cure. Many a good horse has been hastened to an untimely end by a case of scratches contracted in a stall that was not kept properly cleaned and disinfected. The horse that has a pasture of some size in which to run has a distinct advantage over his unfortunate brother

Dr. J. Woodbury's Horse Liniment

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Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.

Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse, I recommend it to my friends. E. J. Anderson, Truro, N. S.

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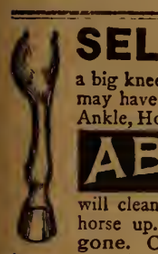
that is confined to the more limited quarters of a stall.

It is to be taken for granted that the coat must be kept clean. The teeth may need attention. In any case where a stallion is apparently not thriving as he should it is well to have a veterinarian examine teeth and float them if it is necessary. The man in charge of astallion during the winter must use his best judgment consistantly. The careful, thoughtful man who always takes time to look his horse over and who realizes the seriousness of his tak is ikely to bring the stalion through the winter sucessfully.—H. E. McCarthew, in The Breeder's Gazette.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Advertise in the Farmer

CONSERVING THE TESTED SIRES

One should not be too hasty in parting with the old faithful improvers of the farm herd. A bull is not at the end of his usefuness when four years of age, nor is a ram or boar. Yet too frequently the sire of that age is sent to the shambles and a young succesor taken in that is in every respect an unknown quantity as regards his breeding ability. The only reasonable excuse for getting rid of a tried sire is that his female offspring are coming into the herd. But that is not sufficient reason in these times for butchering a four-year-old bull that cannot be replaccd except at a high price and possiby with results no less serious than inbreeding would produce. The dread of inbreeding is not as serious these days as it once was. Experienced breeders recognize that the mating of animas that are cosely related is largely a question of proper selection of matings. However, few men care to take any chances of reducing the size, constitutional vigor or quality of their animals by breeding a bull back to his own progency. But there is another plan that may be followed and the sires conserved. In almost every community there are two or more pure bred herds of the sahe breed, the sires of which may be exchanged when there is danger of inbreeding. The need of breeding animals is too great in these times to sacrifice good males in the fullness of their powers. A bull, properly used and not bad tempered, should be serviceable until the age of nine or ten years.

HIP LAMENESS

W. B. I.—Bought a horse last spring that was limping a litle on te right hind foot. I thought it would soon pass away, and let him stand in the barn for about ten days without geting any better. He got very lame. As soon as seeding was over, I blistered him for stifle joint lameness without any sucess. I then tried Absorbine, without help. It now appears that the lameness is in the hip. He canno move the lame foot forward the same as the other foot, and the parts from the tail to the point of the hip seem to be waning away, or is much lower than the other side."

Answer—Hip lameness in horses is about the worst kind of lameness to detect and cure. This is owing to the fact that the hip joint is what is known as a ball and socket joint and very deeply embedded in the tissues. We would advise you to procure at a drug store a blister composed of a dram each of biniodide of mercury and powdered cantharides, mixed with an ounce of lard or vaseline. In applynig the blister, clip the hair off around the hip joint and rub the blister well in over the region of the joint. Keep the horse's head tied so that he cannot reach the blistered part with his mouth. Leave the bister on for a couple of days and then wash off with soap and warm water, and appy a little lard to the blistered part every day until the scab loosens. Where the muscles of the hip appear shrunken you might rub the affected part with liniment composed of an ounce each of turpentine and ammonia to a pint of raw linseed oil. Rub a little of the liniment into the muscles every day as long as seems necessary. This horse, after being blistered, should be allowed six weeks' rest, and if lameness is still present setons or tapes should be inserted over the seat of the trouble. We should strongly advise you to carefully examine the hock joint of this horse, as your description o fhis walk is suggestive of hock lameness. If any doubt exists, give the hack a good blistering also.

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CARING FOR HORSES' SHOULDERS

From the standpoint of utility in a work horse, the shoulder is one of the most important considerations. A good slope makes the best collar-bed. Straight shoulders with thick withers are most susceptible to injury. If the shoulder is straight, the force of the pull is thrown on the point and not evenly distributed.

A cheap, ill-fitting collar is a poor investment. The best way to secure a good fit is to take the horse to an expert harness-maker, where the proper size can be obtained, or measurements may be taken from which a collar can be made to order. If the horse has been idle through the winter and has taken on surplus flesh, allowance should be made for the size needed when the horse reaches its normal weight. When the collar is in the proper position there should be room to allow the hand to be laid between it and the withers.

Careful fitting of the collar may come to nothing if the hames do not fit properly. The top hamestrap, if rightly adjusted, will neither pinch the top of the neck nor be so loose as to allow rubbing. The lower hamestrap should be buckled tightly to insure a snug fit of the hames against the collar. If the tugs are properly adjusted the line of draft will be at right angles to the collar bed and the pull will be evenly distributed over the shoulder. This usually means that the tugs should be fastened at a point one-third of the distance from the point to the top of the shoulder. The traces should always be the same length; if not, there is a side pull on the shoulder.

Then if care is used in hardening the horse to the work, little trouble will result. Frequent stops are of advantage to the shoulder and an occasional lifting of the collar helps. Bathing the shoulder at night with cold water restores circulation and hardens the skin. By cleaning the collar each morning, a smooth surface is brought in contact with the shoulder and rubbing which might result in a breaking of the skin is avoided.

With the best of care, however, sore shoulders cannot always be avoided. As long as the swelling is well defined and movable, the skin alone has been damaged. This is best treated by carefully washing the surface. Some good shoulder washes are: (1) Alcohol, 1 pint, and the white of two eggs, thoroughly mixed. (2) A solution of silver nitrate, 10 grains to 1 ounce of water. (3) Carbolic acid, one pint in 15 parts of glycerine.

After the surface has been thoroughly cleansed, the wound should be powdered with iodoform mixed in flour or starch. In the case of a wound affecting the deep-lying tissues, the treatment is more involved and the injury much slower in healing. The wound must be kept thoroughly cleaned with an antiseptic and the horn-like substance removed. If the wound must be lanced, the skin should be spared transversely, but need not be spared longitudinally. The injured spot should be protected by means of a hole cut in a pad, if the horse must be worked.

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POULTRY.

DUCK RAISING

By VICTOR FORTIER, Poultry Division, Department of Agriculture.

Importance and Advantages.

The duck, a web-footed aquatic bird, similar to the goose but smaller, is one of the easiest and most profitable fowls to raise when suitable ground and sufficient water are at hand, and one which gives the choicest products. Water is an absolute necessity in duck raising. It is not essential that it should be running water or that there should be an abundance of it; it must, however, be renewed frequently so as to be kept relatively fresh and clean.

The successful duck raiser must have ingenuity, activity and experience and be a close observer. It is easy enough to indicate a general method of breeding and handling but climatic conditions, facilities, local resources, feeding and care, have such an influence on breeding that a method that might be excellent in one district might be a failure elsewhere.

The Plant

Duck raising does not require a very elaborate plant. A board shack, a shed covered with tar paper or straw, is quite sufficient for the ducklings in summer. The duck house should be built so as to avoid dampness, and the floor should be covered with a thick litter of straw or similar material which should be renewed frequently. For raising on a larger scale, a larger building is required; it should be well closed on three sides with movable sections and a wire door in front. In winter an ordinary hen house will do very well if it is well ventilated, well situated, dry and kept very clean. When there is no stream of water, pond or pool near by —for the use of the breeders—a small cement basin or reservoir or simply a zinc or galvanized iron box, which is kept filled with water, will do.

The Breed.

The choice of the breed is very important. Preference should be given to the breeds that are known to be of superior quality, as regards the quality of flesh, size, rapidity of development, etc., as such breeds are always the most profitable for the market or for home consumption. There is a large number of varieties of ducks which cost as much to raise or to care for as choice breeds and are not nearly so profitable.

The most popular breeds are the Pekin, the Rouen and the Aylesbury, all of which give a well flavored flesh. The Muscovy is very large in size with very fine coloring, the male of which, crossed with the common duck, gives a fine but sterile duck which is very popular for fattening purposes.

The average weight of these various breeds is from seven to ten pounds. They are hardy, early, good layers, large in size, with a very fine flesh of good flavour.

Next comes the Indian Runner, small, weighing not more than four to four pounds and a half, but very popular for the delicacy of its flesh, relative hardines sand laying qualities.

Laying and Incubation

The duck, with the exception of the Indian Runner, lays from 25 to 75 eggs in a year. Indian Runners frequently lay as many as the ordinary hen and may lay every month in the year. Usually the other ducks do not lay before spring. When they are at liberty to go where they please, they often hide their eggs in nests which are built outside the poultry yard. Therefore it is better to keep them closed in until after laying, which takes place during the forenoon.

One male is sufficient for from four to eight females. When there are too many males in a flock at mating time, they quarrel and the eggs are not properly fertilized. The eggs kept for incubation should be of average size and as fresh as possible. However, duck eggs keep their fertility longer than hen eggs. Eggs kept for incubation should receive special care; they should be kept in a cool place, on a layer of bran, sawdust or dry sand. As duck eggs are very susceptible to cold, they should be covered, if set under a hen, when she leaves her nest in quest of food.

The duck is a good sitter but is seldom used for this purpose. Preference is generally given to the hen, which takes very good care of the ducklings. Large hens should be selected fo rthe purpose. The hatching lasts from 26 to 29 days. Artificial incubation is generally used in commercial plants. It enables the breeder to have the ducklings ready for the market at an early date.

Care of Ducklings

When the ducklings are hatched, they should be left for ten hours or so under their mother or in the incubator; and should not have anything to eat for 24 to 48 hours. They may be allowed a little water and milk in a shallow pan to drink so that they may just dip their bill without wetting their bodies. If they should become wet they ought to be put near a fire, otherwise they become chilled and often die. The first feed should be a mash consisting of stale bread soaked in milk, hard boiled eggs, bran, green food, finely chopped. Curdled milk may be added. Later on, a fairly soft mash of corn flour, mixed with cooked potatoes will make an excellent meal. Such roots as carrots, turnips, cooked beets, may also be used. It is well to add a small quantity of animal food, blood, meat flour, butcher's scraps, etc.

The mash should not be too thin, otherwise it will cause diarrhoe. A small quantity of gravel or coarse sand should be added.

All cooked roots and tubers, lettuce, fish (in small quantity) given judiciously are all suitable for duck raising.

Cold and rain are very injurious. A duckling that has got wet by rain or otherwise in the first eight or ten days of his life is in great danger of dying. He drowns quickly in little water. Do not leave wet ducklings in the sun for the purpose of drying them, they might get sunstruck and die. Do not let them take a bath until 8 or ten days after birth, and then only for a very short while and if for market they are better kept from swimming at all.

If no running water is available or if there is no pool big enough so that they can swim freely, a tank should be set up with a sloping board at both ends so that the ducklings may easily go up or come down.

When the duckling is a month old if for stock purposes, it may be given its entire freedom if there is a stream in proximity. All it requires is a meal at noon and one at night. Ducklings well fed, in regularly increasing rations, are ready to market at two or three months old.

Ducklings that are reserved for breeding purposes should be selected among the most thrifty specimens and from an early hatching.

Rations

Ration for one month old ducklings —Bran 2 parts, cornmeal 2 parts, shorts 2 parts, beefscraps ½ part, gravel, crushed oyster shells or saud 3 per cent. mixed with milk or water, feed them all they will clean up three times a day.

A ration for one duck.—Morning: Cooked potatoes or roots, 2 ounces; meal, ½ ounce; meat or fish scrap, ½ ounce; fireen food, 3½ ounces; gravel, crushed oyster shells or sand, 3 per cent., to be mixed with milk, 3 per cent., to be mixed with milk. Evening: Cooked grain, 1¾ ounces.

Fattening

Fattening may be started as soon as the ducks are eight weeks old. They are fattened in a yard or pen. They should be isolated as much as possible, in a dark building well ventilated and provided with a good litter, always kept very clean. The food should consist of mash mixed with milk, rather thin, and composed of cooked potatoes mixed with corn meal, barley meal, shorts, beets, cooked carrots, and green feed. Ducks are ready to kill when they move around lazily and when they refuse their feed. As a rule it will take about two weeks to finish them.

It is recommended to let the ducks take a bath so that they may be clean themselves, and to starve them at least 24 hours before killing. Ducks are killed in two ways: (1) by disjointing the vertebrae of the neck; (2) by bleeding, which is done by cutting the veins in the roof of the mouth. They should be chilled before packing.

Diseases

Ducks are subject to only a small number of diseases, which is an important point in favor of this industry.

Constipation

Caused in the majority of cases by exclusive or too long feeding on grain. It is recommended to give a purgative composed of two or three grams of sulphate of soda in a large spoonful of water.

Cramps

Cramps is a sign of anaemia and weakness. The duck is unable to stand and shows symptoms of diarrhoea. The sick birds should be isolated. Quinine and gentian powder should be added to the ration at the rate of one teaspoonful per day for every ten ducklings one month old; a larger dose for older birds. Also put three grams of iron sulphate for every quart of drinking water.

Diarrhoea

Caused chiefly by wet green feed and sometimes by worms. In the latter case, it may be cured by an ordinary vermifuge, such as gentian, tansy, which is added to the drinking water with a little charcoal power.

Diphtheria

The duck keeps its bill open for breathing. Put in the mash, per duck and per day during eight days: Iodine, 5 drope; flour of sulphur, one pinch.

Mosquitoes.

To keep away mosquitoes, which greatly inconvenience ducklings at times, the ducks may be rubbed lightly two or three times a week with lard and kerosene or lard with a small quantity of carbolic acid.

Rheumatism

Generally caused by exposure to cold. The duck walks with difficulty. Keep the duck in a warm place, rub the limbs with a little oil of turpentine, feed well and put bicarbonate of soda in drinking water (5 grams of bicarbonate for every quart of drinking water).

Vertigo

This is a fairly common disease, generally caused by long exposure to the sun. The duck turns round on himself almost continually, he appears to be drunk.

This disease may sometimes be cured when it is taken in the proper time; bleed the bird at the vein under the wing or the membrane of the toes. If this treatment does not succeed, it is better to kill the bird, which is still very good for eating.

PREPARE THE EGG LAYER FOR WINTER PRODUCTION WHEN PRICES GO SKY HIGH

We are told that "eggs are going sky-high" before long. And while this may be somewhat exaggerated, yet we have to admit that prices are on the upward trend. Not only egg prices, but grain prices and, in fact, prices of nearly everything else.

A good many poultry keepers are asking themselves the question: "Will it pay to keep hens for winter eggs and feed high-priced grain?"

The above question must be answered by the individual himself, or by someone who understands local conditions. But so far as we are concerned, there is no question as to whether it will pay or not. We know by long experience that winter eggs are profitable and with ordinary success we still hope to come oue "ahead of the game."

Plenty of Feed Essential for Winter Production

There is no magic in getting eggs in winter. But a good many things must be considered. To begin with, it is essential that the fowls kept be healthy and of suitable age, i. e., neither too old nor too young. Old hens, as a rule, put on flesh instead of laying eggs, while small, late hatched pullets or those that were stunted in growth, will lay no eggs during the winter months.

PEERLESS PERFECTION
The Fence For Real Protection
gives life time service. Is made of the best Open Hearth steel fence wire, all impurities burned out, all the strength and toughness left in. Makes the fence elastic and springy. Will not snap or break under sudden shocks or quick atmospheric changes. Galvanized to prevent rust and the coating will not flake, peel or chip off. Can be erected over the most hilly and uneven ground, without buckling, snapping or kinking. Every joint is locked together with the well-known "Peerless Lock." The heavy stay wires we use prevent sagging and require only about half as many posts as other fences. Send for catalog. It also describes our farm gates, poultry fencing and ornamental fencing. Agents nearly everywhere. Agents wanted in unassigned territory.
THE BANWELL-HOXIE WIRE FENCE CO., Ltd.
Winnipeg, Manitoba Hamilton, Ontario

THE WINTER TERM
of the
Fredericton Business College
opens on
Monday, January 7, 1918

Pamphlet giving particulars of our courses of study, rates of tuition, etc., will be mailed to any address os application.

W. J. OSBORNE, PRINCIPAL,
Fredericton, N. B.

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309
Windsor, Ont.

Children Like It

It is not an easy matter to get a medicine that children like, or to force them to take one they don't like. Most mothers know that a cough medicine, while palatable, should contain no drug injurious to the child. The great popularity of

Chamberlain's Cough Remedy

is explained by the fact that it contains no opium or narcotic of any kind, and at the same time is so pleasant and agreeable to the taste that children like it. For this reason it is a favorite with the mothers of young children.

Yours for health,

—Granny Chamberlain.

28

Keep Pullets Separate

Don't let the young pullets roost in the same house where the hens are kept, until they get used to the rest of the flock. There are always some backward pullets that cannot "hold their own" with the older birds. For these, we have a house and yard where they are kept for a few weeks, separate from the others. Of course, they must have good care and plenty of feed.

Remember, these so-called backward pullets are not the culls, but good thrifty pullets which seem rather timid and, for some reason, are unable to get their full share of feed. A variety of grains and other things are necessary. Practically the same ration is required for growing pullets as that which is necessary for laying hens.

Also, moulting hens. The latter require a liberal ration. Plenty of feed and good, dry roosting quarters should be provided if the hens are expected to come through the moult and be ready for business, before cold weather sets in.

Buttermilk Valuable for Egg Production

Buttermilk is very beneficial, both as an egg producer and growth promoter. It also helps the moulting hens to grow feathers. Bear in mind that the latter are under a strain so to speak. Their vitality is beink taxed to the limit. The late moulter is very frequently a heavy layer and while she is growing a new coat of feathers, she is, at the same time, laying up egg material for the future. We keep some milk before the fowls most of the time, but sweet-milk should never be used because it takes a bad effect on the bowels. Be careful to keep the milk trough as clean as possible.

There is doubtless a great deal of soft corn in many parts of the country at this time. Be careful about feeding this immature grain to poultry. New corn, at best, is none too safe. In former years we have suffered severe loss by feeding poultry new corn, especially turkeys. If new soft corn must be used, we now boil it.

This same rule holds good with other things such as musty grain, cull beans, etc. If any of these are not too badly spoiled, they may be made suitable for poultry feed by thorough cooking. This sort of feed can be used as a mash by adding bran or something similar. Right here we want to speak a word of caution in regard to the use of crushed corn. When the cob is crushed with the corn it should not be used as a poultry food. The crushed cob is practically indigestible, somewhat similar to sawdust. We have known of a number of cases where poultry have died from eating "cob meal." They simply cannot see the difference between cob meal and corn meal.

A Wheatless Ration

While wheat is one of the best egg-producers known, when fed along with corn, we have cut it out of the ration entirely, on account of the cost. Instead, we use bran and boiled oats. Thus, with a little corn meal added, makes an excellent mash. Sometimes we use boiled vegetabls Somtimes we use boiled vegetables, instead of oats.

When the hens are kept housed, as they must be, when the weather is severe or snow is deep, it is essential to vary their ration. We sometimes add raw cabbage (chopped) to the mash. A little salt or a dash of cayenne pepper helps to give it a "tang" that is greatly relished. Green stuff, or a substitute for same should be provided. Pure water, with the chill removed, should be kept within reach.

Don't fail to provide some sort of place where the hens can get all the exercise they need. We have regular scratch-sheds attached to each house, but in former years the floor of the poultry house answered very well.

Every fall when dry leaves are plentiful, we store large quantities to be used as scratch material. Rye in the sheaf, or other unthreshed grains are used, also. Small grain, such as kaffir or even millet, will answer to make the hens work, but will not take the place of corn.

Fall Feeding Important

Sharp grit is an important factor. Again let us impress upon the minds of beginners the importance of a generous ration, right now, for both old and young. Don't wait until winter to begin feeding fo reggs. The fact is, chickens are more often under-fed than over-fed, at this season of the year. If judgment is used in the selection of feeds, it is next to impossible to over-feed a moulting hen or a growing pullet.

As to hopper feeding, don't do it unless the fowls have been accustomed to it, from the time they were hatched. Otherwise, they seldom know when to stop eating.

A warm mash in the morning, with scratch-feed and "grains" through the day and a full feed of warmed corn at night (never feed frozen corn) will give better results as a rule. We usually allow one quart of shelled corn for every ten fowls. A large handful for each hen is a safe rule, but may be varied.

ANNA W. GALLAGHER.

nnae .t1s?k W.s drwK

NOTICE TO FARMERS

Cards requesting information about seed will be distributed in a few days by the school teachers. These cards are for information only and no person is bound in any way by them. Every man receiving one is requested to fill it out immediately and return to the teacher.

If any do not receive cards, state seed requiremnts for 1918 to the Secretary of an Agricultural Society or to the N. B. Department of Agriculture, Fredericton.

POULTRY HOUSE DISINFECTION A DESIRABLE STEP

The principal factor in the eradication of poultry diseases is the adoption of proper sanitary measures at the outset. Infectious disorders will recur, no matter how wisely treated, unless such treatment is supplemented by the liberal use of efficient disinfectants. Disinfection is the one basic principle upon which rests freedom from disease and prevention must occupy the foremost place if headway is to be gained.

The proper method of disinfecting fowl houses is as follows:

Remve all litter from the floor and nesting places and burn as near the building as convenient to avoid contamination of the surrounding soil. If possible remove nests, roosts and other portable fixtures and place in the sunlight. Empty all hoppers, feed bins, etc., of dry mash and other grain and discard grit or scald with boiling water before using time. Scald all utensils, pans, etc. If cotton fronts are used, these should be removed and either washed thoroughly or scalded with boiling water. The windows should be taken out and washed with warm water and soap, the frames being well scrubbed with a hard brush. If straw lofts are used, the straw should be removed and burned with the litter. The inside should then be thoroughly swept down to remove cobwebs, dust accumulations, etc., or if possible, flushed out with a good hose. All accumulations of hard droppings should be loosened by softening with water and then scraped clean with a hoe or other sharp instrument. Disinfection may now be commenced. Mixed fifty pounds of unslaked or quick-lime in a barrel of water and add to this one gallon of good commercial disinfectant. If a smaller amount is required it may be made by adding two and one-half pounds of quick-lime to a pail of water plus half a teacupful of disinfectant. Be sure that the lime is not slaked by exposure to the air as all its disinfecting power is therebf lost. The easiest method of applying the lime-wash is by mean s of a spray-pump which can be purchased at a reasonable cost and can be used to advantage in other buildings. Before using the lime solution it is advisable to strain it through a fairly fine sieve or cheese-cloth as the filter is liable to become clogged. In the absence of a spray-pump, a whitewash brush may be used although it is difficult to fill the cracks and crevices without a stream to drive in the solution. These cracks serve as breeding places for mites, lice, etc., and should be given careful attention. Where an infectious disease, such as tuberculosis, has been present, it is wise to spray the interior at least twice with an interval of one week between each application. Otherwise one good treatment will be sufficient. The runs, if not too large, should be covered with a thin coating of air-slaked lime and then spaded or ploughed to a good depth. If lime is not available, a thorough spading may be sufficient although less ecective than the former method. The runs should be changed each year if possible or divided up, one-half being sown to rape or other green crop This cropping destroys the breeding places of worms, etc. If portable houses are used, they should be moved frequently as feeding fowls and chicks on the same ground year after year, serves to infect them with numerous diseases. Allow the fowls open range is such : av-ailable.

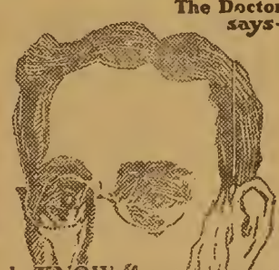
You Want Your Dairy Bright and Sanitary
Keeping things clean makes them work better and last longer.
Then use Old Dutch and save time and money.
Old Dutch Cleanser
Chases Dirt

Disinfect in the spring and fall if possible and by all means in the fall before introducing fresh stock into the fowl houses.

A GOOD LICE KILLER

According to Farmers' Bulletin No. 801 sodium fluorid powder is death on poultry lire. It can be dusted into the feathers so it will reach the skin. It should be applied to all parts of the body. It can be made into a solution one ounce per gallon of water and stir well. Dip the poultry into it. The dipping method kills the lice quicker, better and more cheaply. The sodium fluorid has no bad effects on the skin but is a little irritating to the air passages. It is however, very destructive to the lice.

The Doctor says—



I KNOW from years of experience that Wilson's Invalids' Port is a tonic of great merit, prepared with Cinchona according to the British Pharmacopœia.

℞ *Cinchona Bark, B.P., Fruit Acids, Aromatics, Salts, and Old Oporto Wine.*

Absolutely no alcohol is added

Wilson's INVALIDS' PORT

(à la Quina du Pérou)

Big Bottle (2) Ask your Doctor All Druggists

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

A CHEERFUL RECEIVER

An Object-Lesson Christmas Story

Told by Ethel Chapman Haring

Giving always came easy to me. I'd rather sit hungry with my soul all swelled up wtih the pleasure of giving away my supper than eat the best meal in Ellenville. And my appetite's middling, too. It was part my disposition, and half the way I came up.

You see, I'd just turned up my braids and let my skirts down to my shoe tops when father died, and before my heart had done ashing mother followed him. Then the mine petered out—the one that had kept up going ever since father's fall in the mill—and there I was, all alone, with just the house, besides a little income from railroad stock. All Ellenville believed in that stock as they believed in gospel and government, but 'twasn't near enough for me to live on. That is, if I kept the house. And I was set on that.

Well, I'd always been fond of needlework, so I put my hair in a pug, let my skirts down to the ground, sent old Jemima to the son who'd been wanting her for years, and started to sew for a living. There were Granny Grunts a-plenty, but mostly folks sympathized with me wanting to keep the house. And besides, I was a good seamstress.

After a few years I got to be a good dressmaker—for Ellenville. I could give to the church and the village improvement society, and do a little for those shiftless Cummingses over Jones's Creek way, and old Dosia down the lane—I suppose her name was Theodosia. Every year I got more independent. And independence is giddier than hard cider.

The summer I was twenty-four Tom Betterly began to keep company with me. He wasn't earning much in his father's hardware store, but he had an interest in the business, and he was likely and clean and strong. There wasn't a girl in Ellenville who wouldn't have been proud to have him pay her attention.

I was. But in those days the only way I knew to show it, was to do things for him. I wore my eyes out making him shirts by hand—nights, after I'd been sewing all day. When we went on little ercursions I wanted to pay my half—I had more than he did, anyway. He always made a fuss about it, but I knew he'd save what he didn't spend, and, you see, for eight years I hadn't had any practice cutting my ideas by someone else's pattern.

Well, along Thanksgiving time Tom got restless. Once in a while he'd stay away on his regular evenings, and not give me any reason, and I'd sit at home working on Christmas things for him and my poor people, and pretend that the bottom hadn't dropped out of everything. The next time he came I'd be too proud to ask questions. But dressmaking the way I was, it wasn't long before I found out. He was calling on Lucy Spire.

I was struck all of a heap! Why, she wasn't even pretty, except in a skim-milk sort of way, and no more fit for a poor man's wife than a sleazy chiffon's fit for a pair of overalls. How I suffered those weeks! A man who had a fine chance to find out, called jealousy cruel as the grave. It is the grave—of happiness and charity and peace.

Christmas coming, too! And I had two dresses to finish for Mattie Blake, who was almost engaged to a man who was to visit her brother over the holidays, and a nun's veiling for Mrs. Sprowles—her four girls were all coming home with their families, and she wanted to show them that she wasn't a back number, even if she did live in Ellenville, and was nine times a grandmother. It kept me stitching till all hours, and I had my poor people to do for after that, so I didn't have much time to worry about Tom.

On Christmas eve I put the last tired stitches into Dosia's wadded packet. It was grey flannel lined with sheet wadding—warm and serviceable, just the thing to keep the rheumatism out of her grumbling old joints.

At eight o'clock Tom hadn't come. His folks had invited me for Christmas dinner, but I thought he might drop in for a little celebration by ourselves. When he didn't I knew that able. —i wm TfiY vbgkq cmfwy shrd was the end. It was a mighty miserable Samaritan who started for the lane with Dosia's jacket under one arm and a basket of groceries and underwear for the Cummingses on the other.

The lane was out at the north end of Ellenville, where most of the ragtag and bob-tail of the town lived—a long, nipping walk from the hill. The moon was cold and unfriendly, and the stars sharp as steel points; my fingers ached and my ankles kept turning with a jerk on the frozen, nubby road. Once in a while the tears would come—because I was tired out, I told myself—but it was a scrap of comfort that somebody needed me, if Tom didn't.

I left my basket at the Cummingses first. All the youngsters swarmed to the door, and their poor worn-out mother—she wasn't much older than I was—asked me in, real craving, but I was too wretched to be sociable.

There was a faint light in Dosia's box of a shanty, that some good-natured men had built in a woodsy lane on the edge of town, to keep her out of the poor house. The bent old creature opened the door and peered out at me from the shadow of the red knitted hood she always wore. I was glad she couldn't see my eyes.

"Why, bless my stars and garters, come in!" she cried, blinking and throwing up her palsied old hand. "'Tis you, after all. But I might 'a' know you'd be sure to come. Set, won't you?"

"Thank you, Dosia." I shut the door after me and held out the bundle with a poor excuse for a smile. "But if I hadn't wanted to bring this to you, I shouldn't have stirred out tonight. What with sewing and Christmas work, I'm clean tuckered out. I hope the present'll keep you nice and warm."

Dosia took the package and fumbled with the string. "I was hoping you'd stay," she said, sort of resigned. "But I s'pose folks that don't have nothin' to do can't expect busy ones to waste their time—after all the hours you put on this present, too. My, but it's handsome—and how nice it's finished! I used to do fine feather stitchin' and herrin' bonin' afore my eyes give out. The material's real heavy, too—almost like some I remember mother buyin' at your Grandfather Bassett's store. I'll admire to wear it. You're awfully good to a useless old woman."

Dosia could run on at the fearfullest rate—not having any one to talk to generally, she had to make the most of her chances. I saw I'd be spending the eveing if I didn't cut her short, so I said:

"I enjoyed making it for you, Doshy. Merry Christmas!" and was turning to go, when somebody knocked.

"Oh, Doshy!" I whispered, "you're going to have another caller, and I'm too tired to see anybody. Can't I run into the lean-to until they're gone? Please!" and I tiptoed into the woodshed at the back.

She was dreadfully flustered, but she managed to let the visitor in. And who do you think it was? Lucy Spire, the girl I thought was entertaining Tom up on the hill! The minute she stepped inside she put her arm round Dosia's crooked old shoulders and kissed her withered cheek. Lucy wasn't a bit the get-up-and-get kind, but she had lots of brown hair done in a droopy twist, and her drawly voice had a pleasant, comfortable sound.

Christmas gift, Miss Dosia! Why, I b'lieve you don't know what that means! Easy to see you weren't fetched up in the south." She held Dosia's hand all the time. "It means I want you to make me a present."

I blushed for a well-off girl like her making Christmas an excuse to beg from that poor woman!

"It's a long time since I made a present," said Dosia, as if the words came hard. "I don't know as I've got a thing you'd want."

"Why, Miss Dosia, what you talking about? You've forgotten that lovely bunch of rose pineys you gave me last spring! I never shall. And those geranium slips—why, I set out 'most one whole bed from those slips! And I know you've got this, but it's such a big thing I'm almost afraid to ask." She looked real shy and persuading.

"I'm sure if I've got it, it's yours for the taking." Dosia was all excited.

"Goody! Lucy squeezed the old woman again. "It's one of those dear little baby evergreens in your back yard—for a table tree, you know. The boys have looked all through the woods, but there aren't any as straight and full as those of yours. They would have asked you themselves, but I was afraid my big brothers would frighten you. They're waiting for me up the road. May I have one?"

Old Dosia began to cry. "Take 'em all. I don't want 'em. I don't want anything as much as I want to give somebody something. 'Course we poor folks 've got to be guv to or we'd freeze or starve, but we've got to give, too, or there ain't much use livin'. It's dreadfully hard not to have anything anybody wants—specially Christmas. My, it's like old times mhen I could be free-handed, too."

Lucy held her tight—I couldn't hear what she said—maybe she didn't say anything—but she just petted her and crooned over her as if she'd been a baby. Finally Dosia said:

"Well, I s'pose we mustn't keep the boys standing in the cold on Christmas eve. Besides, I just can't wait to have you take that tree!"

"Ah, thank you! I knew you were a giving sort of person. One of the boys brought a hatchet. Goodnight—I hope somebody'll give you a present you want as much as I do this!"

"I got my present," Dosia quavered. And I knew she didn't mean mine.

A minute after, there were voices and the blows of an ax—then shouts of "Merry Christmas," as they passed the house. Dosia looned out and waved.

She had forgotten all about me, so I clicked the latch before I came into the room.

"Doshy," I said—and I didn't need to put on the shivers—"I'm a mite cold waiting out in the lean-to. Could you make me a cup of tea before I go?"

She gave a little jump and bustled over to the rusty old stove as if there wasn't such a created thing as rheumatism.

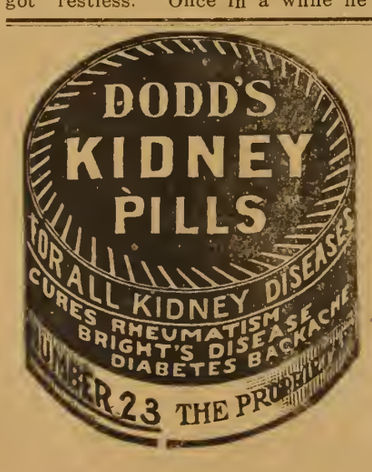
"My suz, I should think I could. Will you stay? Tea's one thing I allus keep by me. Set down, do, and be as comfortable as you can," and she pushed me toward the only rocker, a crazy thing with spread legs.

Well, in two shakes of a lamb's tail we were cozy, and I was telling her about Mrs. Babbitt's new high-heeled, low-necked daughter-ni-law from Drayton, and how the minister had scolded the choir for giggling when one of the Cummingses forty'leven dogs sneaked into church last Sunday.

She looked real happy when she talked to me about the time when my grandmother and she had been girls together. I'll warrant she was a keen one in her time. She told me about Grandfather Bassett, who died before I was born. I must have favored him, for she said Lucifer was a meek and brow-beaten citizen side o' Eben Bassett.

When her wheezy old clock snarled ten, I could hardly believe how long I'd stayed, and I told her so. "But there's one more thing I wish you'd give me, Doshy—a twig off your balsom fir for a Christmas tree."

"Pull it up by the roots, if you're a mind to. I don't want it. Ner nothin' mor 'n I've had tonight. Tears stood in her filmy eyes. "You've allus been



LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

A MESSAGE TO WOMEN!!

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:

Mrs. M. Summers, Box 309 Windsor, Ont.

HAD A VERY BAD COLD and COUGH

DR. WOOD'S NORWAY PINE SYRUP CURED HER.

Mrs. C. Dresser, Bayfield, Ont., writes:—"I want to tell you of the benefit I got from your medicine.

Last winter I had a very bad cold and cough, but after taking two bottles of Dr. Wood's Norway Pine Syrup I was cured. I think it is about one of the best cough syrups that I know of. I always keep a bottle of it in the house so I can have it when I want it.

The other week I told an old lady about "Dr. Wood's." She had been sick for three weeks with bronchitis, and had been getting medicine from the doctor, but did not seem to be getting much better. She got one bottle of Dr. Wood's Norway Pine Syrup, and she says it has done her more good than all the doctor's medicine she had been taking."

Dr. Wood's Norway Pine Syrup is rich in the lung healing virtues of the Norway pine tree, and this makes it the best remedy for coughs and colds.

The genuine is put up in a yellow wrapper; 3 pine trees the trade mark; price 25c. and 50c; manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

good to me—why, I've got those foot warmers yet you made me when you was a slip of a girl—but I never felt really drawed to you till now."

I broke off a twig of the balsam; I forgot all about being cold. All the way home I saw how Tom must have felt, just like Dosia—noly worse, being a man and made to be depended on. And when I got home, the first thing I did was to whip those handmade shirts and hemstitched handkerchiefs into great-grandfather's sea chest, and stick the bare twig into a flower pot.

Bright and early next day I was up and doing. Things were going to look Christmasy if my heart was one big ache. I piled the wood into the baseburner, and tied red paper petticoats on all the flower pots. But before I'd half finished looping the ground pine over the pictures, I heard a man's tread across the porch, and when I answered the big knock Tom stepped into the living room. He looked a little worried—I knew he dreaded the presents he was going to get—but he was there. That was all I cared. In my relief I couldn't speak.

"I came as soon as breakfast was over," he said, taking off his overcoat. "Mighty sorry not to get down last night, but mother wanted a lot of help tacking up greens, and we had a busy day at the store. My, how fine you look!—regular holly bush in that green and red rig. Sure you didn't strain yourself bringing in the Christmas tree?" He smiled a sober sort of smile.

"The tree's plenty big for what I'm going to put on it," I began slow and awkward; then I let go: "Oh, Tom!" I cried, "I'm not going to give you any present. I couldn't think of a thing that wasn't small and mean compared with what you've given me —what you're giving me every day—friendship and love and the hope of a real home."

His eyes shone: He took both my hands in his. "Thank heaven, girl, if that's so. I've been afraid—"

"You needn't ever be, again," I told him. "I'm not going to be afraid, either—of anything. But I should like to know this: Why did you like Lucy Spire so well? Please—just to satisfy my want-to-know-itiveness. Honestly, Tom, I'm not the least bit jealous."

He blushed a little, but his honest look didn't change.

"You needn't be jealous of any girl in the world, Hattie. But to tell the truth, sometimes when you seemed so comfortably fixed and so sure of yourself, Lucy was a change. She has such a graceful sort of way of making a fellow feel—well, more of a man, to be looked to and depended on. But jealous! Why, she can't hold a candle to you."

"I guess any candle she'd hold would shed quite a bit of light on some of my ways of doing things," I said. "But I just couldn't get along without you now, even for Lucy."

"You won't have to, girl; you won't have to."

He kissed me solemnly to seal the promise. And right then and there I learned how blessed it was to be a cheerful receiver.

How Gold Dust saves housekeeping time

Here is an easy way to prove that Gold Dust saves housekeeping time.

The next time you wash dishes try Gold Dust. See if it doesn't dissolve the grease quicker than soap. When you get through, see if you can't honestly say to yourself, "I've saved some *real* time."

But don't let Gold Dust stop at dishwashing. Use Gold Dust in all kinds of household cleaning—such as scrubbing the kitchen floor, washing woodwork or cleaning the bath-room.

But for Gold Dust results be sure you really get Gold Dust. For sale everywhere in large and small packages.

GOLD DUST

The Busy Cleaner

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I was cured of terrible lumbago by
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—Rev. Wm. Brown.

I was cured of a bad case of earache by
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—Mr. S. Kaulbach.

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—Mrs. S. Masters

Manufactured by the
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LABOR SAVING APPLIANCES IN THE FARM HOME

The conservation of our various resources is being discussed from many viewpoints. None of these resources is of greater importance than the strength of the farmer's wife, a fact which apparently has not been generally realized. History has ever shown, not only that a constant stream of vigorous new blood flows from the farm to keep up the waning vitality of the city, but also that from it come most of the men and women who lead the progress of the world. This granted then, anything that will lighten labor in this home or conserve the strength and youth of the wife and mother is cheap at any cost. Did any one ever see a farmer's wife sucering from lack of exrcise? No, but she is often so exhausted by doing her work that seh has neither time nor energy for the higher duties of mother, for self-improvement or for the rational enjoyment of leisure, and in the face fo this there are now many labor-saving appliances procurable at reasonable cost, and in these modern times just as applicable in the country home as the city dwelling. Owing to the scarcity of farm help there has been a remarkable development in the use of hydro-electric energy on many farms, and electricity can now be had in the home of the average successful farmer. This system has the advantage of the adaptability to run many appliances, the sewing machine, separator, churn and washing machine, in addition to lighting the home. Perfect sanitary conditions are certainly among the practical requirements of a modern home which received but scant attention a few yeasr ago. What can possibly be more practical than careful heating, ventilating, plumbing and lighting of a home when it means a constant contribution to health and physical comfort and extends the lease of life. Light, heat and water systems change a mere house into a cosy home.

The kitchen is the main workshop in the home and it cannot be made too handy. The water supply to the kitchen is of very great importance and the modern cistern located in the cellar is proving a boon to many a farmer's wife today, and with this installation the laundry can be provided for adequately in the basement. Water can be piped from the cistern to the laundry, and the usual drudge of carrying water for pumping purposes can thus be done away with. The sink is of double value when provided with a sink drain, and this is easily arranged. The refrigerator is to-day playing an increasingly important part in the economy of the well equipped home. A flour chest is important. Better than the common tilting box is one running on rollers on the floor, with a kneading board sliding in a groove above. Still better is a flour chest in the upper cupboard, filled from the second storey, and having a hopper-shaped bottom terminating in a patent sifter and drop down for use. The kitchen cabinet, improved washer and wringer, measuring cups, graduated spoon sets for cake and pie measuring, improved cake pans, roasters for the ovens, fruit strainers, food grinders, chopping knives and kitchen cleavers for preparing meats, all help out in the busy seasons of cooking, canning and baking. The suction vacuum cleaner and brush sweeper combined make an ideal sweeping day companion, removing as it does the dust not only from the carpet but from the floor beneath, thus eliminating the real cause for germ and disease germs. The O-Cedar mop is another equipment which will save the housewife much unnccessary scrubbing of linoleum and oiled floors, with all the kneeling and "getting up and down" attendant upon the old-time hand-cleaning of floors. The folding rack ironing board, which attaches to the wall, is another convenience worthy of note. The pulley clothes line is a very desirable improvement upon the old method, removing all necessity of standing out in inclement weather on damp ground.

The practical requirements of the modern home consist of every known convenience, too numerous to mention here, but a visit to any up-to-date hardware, commercial store or show roo mwhere electric appliances are displayed would convince the housewife that no line of work in connection with house-keeping or homemaking has been forgotten in modern invention. Work in the up-to-date equipped home is but mere play in comparison with the toilsome duties of former years.

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Terms: 20% Down and $1-$2-$3 Weekly.
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JACOB BROS., Diamond Imp., 15 Toronto Arcade, Toronto

INSTITUTE NOTES OF INTEREST FROM NEW BRUNSWICK

Albert—The young ladies of the village gave half the proceeds of their Hallowe'en Entertainment, $25.70 to the Institute. The members are busily engaged in making sleeveless sweaters for the soldiers.

Bath—This new branch is taking a special interest in the school and several improvements have been recommended to the school board which, if not carried out by the board, will be undertaken by the Institute.

Boiestown—A house to house canvass for new members added 17 new names in October to the list of paid members.

Campbellton—The Tea given in St. Andrews Hall last month by the W. I. in aid of the Great War Veterans' Association of Richibucto was a grand success. The hall, with its prettily appointed tables made the place very inviting, and the patronage extended was a generous one. The net proceeds amountd to $130.83 and after deducting expenses the Institute gave the boys $100.00, which will go towards furnishing their rooms on Water Street.

Centre Napan—The September meeting was especially for parents and children. Mrs. W. C. Galloway read a very helpful paper entitled, "How to Teach Children Economy." Twenty-five children were present to hear Mrs. Galloway's practical suggestions. This branch has prepared a printed programme for several months in advance. Each month contains not more than one subject so that if an additional number is wanted to be included at any meeting, this can be done.

Chance Harbor—Probably encouraged by the prizes the Department is offering for best average attendanse and rarefully prepared programmes for the first six months in 1918, this branrh for the first time since the war began, is preparing a variety programme with a view to winning a prize.

Chipman—Two or three excellent papers prepared by members of this branch have been forwardd to the Department. Especially worthy of mention are "Parliamentary Procedure" and "Banking for Women." "Do your bit" is the motto adopted by the Institute. From a donation received, a drinking fountain and individual drinking cups are being purchased for the school.

Codys—Thanksgiving quotations were given in response to roll call at the November meeting and the girls furnished the programme with thanksgiving readings and recitations.

Corn Hill—The annual social meeting with the "gentlemen" as "guests" was held in November. A very enjoyable social time was held. On October 29th the Pie Social netted $34.00 towards filling Christmas boxes for the soldiers.

A Merry Christmas and a Happy New Year to All

Moncton Business College, Moncton, N. B.

Dalhousie Junction—"How to get money for helping in Patriotic Work" was given earnest consideration at the July meeting. With a small and scattered membership it was somewhat of a problem after other devices had been about exhausted. The unique method arrived at and since carried out is very worthy of mention. The Institute members have agreed to help one another in any way required, such as washing, housecleaning, sewing, mending, etc. In return for such help the members are to pay one another the same wage that would be paid to the regular or professional working woman. The money so earned is then handed in to the Institute to be used as may be needed. The secretary writes, "We find it quite successful. For instance, I have found it inconvenient to have to get a woman to come some distance to do my washing and other heavy work. One of my neighbors now gives me a day when she can and receives the money which otherwise I would pay the regular working woman. On the other hand, I can do some kinds of sewing, darning, etc., rather well and now instead of doing an invisible darn in my friends' frocks for love, I do it for money and give the money to a good cause."

Grand Falls—The members are making a thorough canvass of the surrounding country in the interests of the soldiers yarn fund. Fifty-five Christmas boxes were shipped overseas in November.

Fredericton Junction—This branch is presenting the Children's Home with quilts and is also giving a supply of clothing to a family in distress in their community.

Hillsboro—The Sock Social held in October was a great success. After all expenses were paid there was a balance of $93.00 on hand for patriotic work.

Kennebecasis Valley—The following resolution passed at the November meetini, reads: "For refreshments at Institute meetings there will be no frostings on cakes." A number of members brought to this meeting useful and dainty Christmas gifts costing not more than twenty-five cents. A Bean Supper in October netted $30.00 for patriotic work. This branch continues to hold a Guessing Contest at each meeting and the receipts from same help along the good work being done for the soldiers.

Havelock—A reception was held for a returned hero in October. The ladies prepared the supper, engaged a man to do the serving and left the entertainment wholly to the gentlemen of the place. No ladies present, but about 75 men. This was a complete success. Corporal Keith was presented with a signet ring. The Department is greatly pleased to note that this branch invested in a Victory Loan Bond.

Jeffries Corner and Poodiac—The proceeds from the Basket Social held October 31st, together with the money raised from selling candy at this social, will be spent on school improvements. This branch has also purchased dishes and silver for Institute entertainments.

Lord's Cove—Here is enthusiasm for you. One of the members of the branch made a percale quilt and gave it to the Institute. She has sold 100 tickets so far and ha 150 yet to dispose of, but is quite cheerful that she will be able to do so, and rlear at least $30.00 for the Institute.

Marysvile—Prior to the Canning Exhibit at the Convention, this branrh had an exhibit of their own and awarded prizes. The jars of fruit and vegetables were placed on exhibition in one of the store windows and were greatly admired. The proceeds of a Fall Supper netted $90.00 to be spent on the soldiers.

Minto—The sum of $124.61 was cleared from a picnic held in September. During the past year this branch has raised over $700.00 and with this money a hall is being built in the community.

Nelson—The Birthday Party in

Final Appeal Judge Gives Ruling on Exemption of Farmers

Mr. Justice Duff (the Final Court of Appeal) Declares it is Essential that there shall be No Diminution in Agricultural Production.

(Published by authority of Director of Public Information, Ottawa.)

Hon. Mr. Justice Duff gave judgment on December 6th, in the first test case brought before him, as Central Appeal Judge (the final court of appeal), for the exemption of a farmer. The appeal was made by W. H. Rowntree in respect of his son, W. J. Rowntree, from the decision of Local Tribunal, Ontario, No. 421, which refused a claim for exemption. The son was stated to be an experienced farm hand, who had been working on the farm continuously for the past seven years, and ever since leaving school. He lives and works with his father, who owns a farm of 150 acres near Weston, Ontario. With the exception of a younger brother, he is the only male help of the father on the farm. The father is a man of advanced years.

In granting the man exemption "until he ceases to be employed in agricultural labor," Mr. Justice Duff said:

"The Military Service Act does not deal with the subject of the exemption of persons engaged in the agricultural industry; and the question which it is my duty to decide is whether the applicant being and having been, as above mentioned, habitually and effectively engaged in agriculture and in labor essential to the carrying on of agricultural production, ought to be exempted under the provisions of the Military Service Act.

"These two propositions are indisputable:

"(1) In order that the military power of the allies may be adequately sustained, it is essential that in this country and under the present conditions, there should be no diminution in agricultural production.

"(2) The supply of competent labor available for the purpose of agricultural production is not abundant, but actually is deficient.

"The proper conclusion appears to be that the applicant, a competent person, who had been habitually and effectively engaged in labor essential to such production, ought not to be withdrawn from it.

"It is perhaps unnecessary to say that such exemptions are not granted as concessions on account of personal hardship, still less as a favor to a class. The sole ground of them is that the national interest is the better served by keeping these men at home. The supreme necessity (upon the existence of which, as its preamble shows, this policy of the Military Service Act is founded) that leads the State to take men by compulsion and put them in the fighting line requires that men shall be kept at home who are engaged in work essential to enable the State to maintain the full efficiency of the combatant forces, and whose places cannot be taken by others not within the class called out."

Ottawa, Dec. 8, 1917.

November was well patronized. Each person attending brought in a little bag as many cens as they were old. The proceeds, $35.30 will be spent on yarn.

Newcastle—"Putting Away Summer Clothes" was the subject discussed at the November meeting. The preserves and pickles donated by the members to the public hospital were must appreciated.

Patriotic—In November the Institute held a "Sewing Bee" for a member who has a number of small children and has been most unfortunate in having considerable sickness in the home. The "War Time Prayer" prepared especially for our Convention will be read at the regular meeting of this branch until the end of the war.

Penobsquis—A gentleman of the community entirely in sympathy with the work of this branch, presented the Institute with a load of hay which was disposed of in a short time and the proceeds from the sale will be utilized in patriotic work.

Petitcodiac—Sixty-two boxes to the soldiers overseas were shipped in November. The preparation of these boxes has so exhausted the funds, arrangements were made at the November meeting for a Band Concert and Pie Social in the near future.

Parkers Ridge—There being just the one church in the community and all the members of the Institute attending, this branch is giving assistance towards its upkeep. A lamp is being placed at the front entrance and wood is being purchased for the church and parsonage.

Petit Rocher—The members of this branch seem most active in promoting the work of the Institute. They have a scheme in mind whereby they feel sure they cannot help but take a prize in the membership and programme contest for 1918. The membership numbers 18, yet 38 boxes were prepared in November for men from their community now serving in the King's Army "Somewhere in France."

Ripples—At the September meeting each member was given 10 cts with the request that it be turned into $1.00 before the October meeting. The mmbers have expressed their willingness to send reports of their meetings to the local newspapers.

Sussex—This branch has bought a new piano and placed it in the Agricultural School. "Needs of the Town" and "Victory War Bonds" came in for considerable discussion at the November meeting.

Stanley and Cross Creek—A committee from the Institute was apponited at the October meeting to assist the Agricultural committee in arranging exhibits at the Stanley Fair. The Institute had a very attractive booth at this Fair. Souvenirs from overseas were on exhibition and persons wishing to inspect them were "tagged." The young ladies solicitated contributions from the crowd, and altogether the sum of $129.00 was raised.

Upper Sackville—Practically all the October meeting took the form of an open discussion. Roll call was answered with economical suggestions. Ice cream and frostings were considered extravagant at this time by the majority of members, although some thought if ice cream took the place of puddings or pies at a meal, it was all right. That cream should be made into butter when it is so scarce, is the opinion of this branch.

Whitneyville—The first meeting since organization in October was held November 12th, the subject being "Inexpensive Christmas Gifts." The members showed their interest by displaying a number of attractive gifts at most reasonable prices. A programme committee was appointed to map out a programme several months in advance, which is surely a start in the right direction.

Fredericton—Certainly doing a stroke of work these days. Taking an active part in cooperation with the I. O. D. E. in the distribution of the food pledge cards. November 23rd, under the auspices of the Institute, a Musical Company, entitled "The Harmony Glee Club" put on an excellent concert thoroughly enjoyed by a large audience. This is the first of a series of rondcrts to be held during the winter months under the auspires of the Fredericton W. I. This branch is also holding once a month a meeting for the purpose of giving the women of the city information along food conservation lines. Mrs. Lawlor, President of the St. John Housewives' League, gave an instrhctive lecture in September illustrating with lantern slides "The Cheaper Cuts of Meats and Their Food Value." Miss Jean Peacock, Household Science Teacher of the Provincial Normal School, gave a very helpful lecture in October on Food Values. This month she demonstrated "Meat Substitutes," and next month she will demonstrate the making of Soups. These meetings are becoming very popular and are being well patronized by those women wishing to do their "bit" and "best" in shortening this terrible war. The Institute will again this year hold a "Hospital Day." A house to house canvass will be made, when housekeepers will be asked to give a jar of preserves or pickles to the hospital. Last ycar over 600 jars were collected and this year the members hope to collect cven more, when they will be equally divided between the Victoria Public and Military Hospitals.

Middle Southampton—A very encouraging meeting held at the residence of Mrs. F. R. Brooks, December 1st. A committee was appointed and given a sum of money to purchase Christmas gifts for the small children of the community. A graduate nurse gave an instructive address on "Typhoid Fever."

Welsford—Four new members were gained at the December mcting. Arrangments were made to tender a reception to a returned hero in the ncar future. Afternoon tea, served at the close of the meeting, addcd to the treasury, $1.50.

Devon—Six new members joined at the November meeting. The Nashwaaksis members were the "Guests" at this meeting, and a programme consisting of vocal solos, piano selections, guessing games, etc., was much enjoyed by all. A valued member, soon to lcave the community, was presented with a casserole at the December meeting.

Queenstown—The November meeting was held at the home of the president, Mrs. S. L. Peters. Mrs. T. H. Scovil read a paper on "The Duty of Self Control." The Institute agreed to distribute Food Pledge Cards over the district, thereby showing their approval of and sympathy with Canada's Food Controller. The Institute is making one of their members Nursing Sister Edna B. Davis a life member of the Red Cross Socicty and the sum of $20.00 was subscribed for that purpose at this meeting.

Point de Bute—"Should Children have an Allowance", was the subject so ably handled by Mrs. Frank Trueman at the November meeting. The roll call was another enjoyable feature, the members giving their views on "Given a Dollar, how would you spend it in order to get the most good out of it?"

CROWN BRAND
CORN PURE SYRUP

Children prefer it to the most expensive butter. Why not save money by using more of this syrup ?

In 2, 5, 10 and 20 pound tins—3 lb. Glass Jars.

Write for free Cook Book. 34

THE CANADA STARCH CO. LIMITED, - MONTREAL.

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Yes, we'll rally round the farm, boys,
We'll rally once again,
Shouting the battle cry of Feed 'Em.
We've got the ships and money
And the best of fighting men,
Shouting the battle cry of Feed 'Em.

The onion forever, the beans and the corn,
Down with the tater—it's up the next morn—
While we rally round the plow, boys,
And take the hoe again,
Shouting the battle cry of Feed 'Em.

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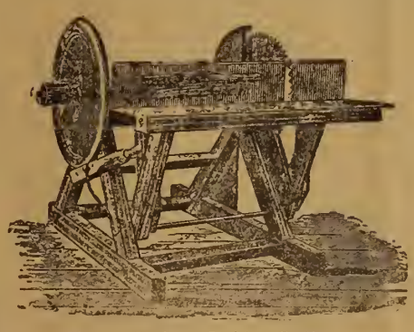

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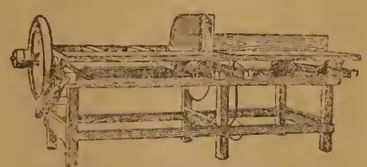

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TABLE made of heavy steel plating, bottom and back in one solid piece firmly bolted to birch frame.

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BEARINGS of high grade babbitt, and grease cups attached.

SAW, best quality 10 guage guaranteed.

Our Long Swing Table cutter is the most popular machine on the market. Ask our nearest agent or write us for full particulars, it will pay you.

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Prompt Delivery guaranteed.

The Sussex Manufacturing Co., Limited,
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SHARP PAINS SHOT THROUGH HEART.

Thousands of people go about their daily work on the verge of death and yet don't know it.

Every once in a while a pain will shoot through the heart, but little attention is paid to it at the time, and it is only when a violent shock comes that the weakness of the heart is apparent.

There is only one cure for the weak heart and that is Milburn's Heart and Nerve Pills.

Mr. H. A. Young, 83 Hayter St., Toronto, Ont., writes:—"I used to have sharp pains shoot through my heart, suffered from shortness of breath, and was so nervous I could not sleep at night. A friend advised me to try Milburn's Heart and Nerve Pills, and after one box I found great relief. Three boxes completely cured me."

Milburn's Heart and Nerve Pills are 50c. per box at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

A STEAM COOKER VALUABLE UTENSIL

Steaming is cooking foods by moist heat in the vapor arising from boiling water. It is the most gradual of all the methods of cooking, and though this necessitates the use of more fuel, yet, as many different articles of food can be steamed over one vessel of boiling water, it is really economical. Its extent depends greatly upon the appliance at hand. An ordinary perforated kitchen steamer with a close-fitting lid is generally all that is required for simple household cookery.

It is a pity that this most excellent method of cooking does not become more generally adopted for cooking meat, poultry, fish, vegetables, puddings, fruit cakes and bread. Most food that can be boiled can also be steamed; it is not advisable to cook large joints of meat by this method because of the length of time required to cook them thoroughly, but smaller pieces of mean, fish, puddings or vegetables are delicious cooked in steam.

Apart from the old-fashioned steamers, there are several improved patterns, which are so arranged that several articles—indeed, four or five courses—can be cooked in one steamer; the appliance is constructed so that each article of food is in its own compartment, so that while the steaming operation goes on, the flavor of the other articles does not affect the contents of the compartment above or below.

A good steam cooker is a blessing to every home, as it is so useful and economical. It saves food, as nothing is lost by evaporation; there is no shrinkage of meats and nothing is burned. It is easy to manage and keep clean, as there is no scouring of pots and pans. A great variety of food can be cooked at the same time with very little attention.

Food cooked by steam is recommended by physicians as more healthful and nourishing than when cooked in any other way. A large portion of the juices and "goodness" is retained in this way which is usually boiled away or evaporated in an oven.

Advantages of steaming over boiling are: (1) The gradual heat renders the food more digestible, hence its special value for invalid cookery.

2. Puddings and souffles are decidedly lighter and richer than when boiled.

3. No water can ever get into contact with the articles steamed.

4. None of the nutritious elements of meat, fish or vegetables are lost in the water, thus all foods retain their full flavor and food value.

5. Pudding cloths are not required, thus the washing of them is saved.

THOUGHT BABY COULD NOT LIVE

Doctors said chances were small because of Severe Stomach Trouble, But Dr. Cassell's Tablets cured her.

Mr. Corby, Harriston P.O., Ont., says:—"Our little girl was weak from birth, and though we tried doctors' medicine and other things she got no better. She just lay and cried, and neighbours all thought we could not save her. The doctors said she had stomach trouble, and that her chances were small. Yet Dr. Cassell's Tablets cured her. They have been worth their weight in gold to us. I don't think there is any medicine for children like Dr. Cassell's Tablets."

A free sample of Dr. Cassell's Tablets will be sent to you on receipt of 5 cents fro mailing and packing. Address Harold F. Ritchie and Co., Ltd., M'Caul-street, Toronto.

Dr. Cassell's Tablets are the supreme remedy for Dyspepsia, Kidney Troubles, Sleeplessness, Anaemia, Nervous ailments, and Nerve paralysis, and for weakness in children. Specially valuable for nursing mothers and during the critical periods of life. Price 50 cents per tube, six tubes for the price of five, from Druggists and Storekeepers throughout Canada. Don't waste your money on imitations; get the genuine Dr. Cassell's Tablets.

Proprietors, Dr. Cassell's Co., Ltd., Manchester, Eng.

WHOLSEOME FOOD AND GOOD LOOKS

Every girl and woman wants to look as well as possible and that is perfecty all right, and what they should try to do. But no one can be good looking, or even wholesome looking unless they are healthy. We cannot have the clear skin, right eyes and the necessary vitality unless we have pure, wholesome blood coursing through our veins, and to have pure blood four things are necessary, good, wholesome food, fresh air, plenty of exercise and sufficient sleep.

With regard to food, to be healthy one must not eat much meat. Meat if eaten in large quantities, has a bad effect upon the health and consequently upon the complexion. It causes uric acid in the blood, rheumatism and hardening of the arteries. On the other hand, "beauty food" is another name for the vegetables and women and grls who ilve in the country may grow in their own gardens, and have in a fresh and wholesome condition, all the beauty food which makes for health and good looks.

When we are eating carrots, onions and potatoes we are taking a course in natural food that acts like a cosmetic, making the skiin clear and soft and rosy. Whatever affects the quality of the blood affects the hair, the eyes, the lips the skin and the figure, as well as the internal organs. The blood which passes and repasses thoughout the entire body either carries strength and nutriment or depletes every organ of the body. And the blood picks up its nourishment from the food we eat, and so to be healthy, wholesome and good looking we must eat plenty of wholesome vegetable foods, and fight shy of much pastry, meat and candy.

COMMON SENSE IN CHOOSING FURNITURE

Get good furniture when you buy. It will pay you in the end. Some young, inexperiened housekeeper will buy a bunch of cheap, useless furniture instead of using good common sense and getting what she needs and of a better grade. In selecting furniture, not only beauty of line, but adaptability to service must be considered. Usually too much attention is paid to appearance, and not enough to service. As a consequence furniture bought because of its looks when tested out does not measure up in the actual service expected. Although an experienced designer will never sacrifice service for beaut, at the same time he will see that both are combined. Better any day a half houseful of good, serviceable furniture than an over-loaded one of cheap junk.

In polishing furniture, never use cheap polish, powder, kerosene oil or vinegar, because the acid in them will dull the finish and eventually destroyit. Get a good grade of polish. First wipe the surface with a soft cloth which has been wrung out of slightly warm ywater. This will remove the dust. Then give it a liberal coat of polish, applying it with a brush so as to reach all corners and carvings. Use at least two cloths (cheese cloth is best) in removing the poish. Unless all excess polish is removed it will collect dust.

Varnish is made of gum and should never be expoced to extreme heat. If furniture stands too near the stove or where he sunlight falls on it, the varnish will become soft and blister. Sudden hanges of temperature will cause the finish to crack and look as if it were full of small scratches. If gas or steam heat is used a bowl of water should always be kept in the room. Otherwise the air will become too dry and cause the glue in your furniture to crack. Then the joints will become loose. Standing near an open window on damp or rainy days will deaden the finish on your furniture and it will probably peel off later. The wood will also absorb dampness and swell, causing the glued joints to loosen.

HOW FURNITURE MAY BE REFINISHED

Most varnished furniture in the course of time needs serious attention and most funiture is varnished. Somethe varnishes can be rubbed down with boied linseed oil and pumice stone, giving a duller polish, but more often the varnish should be removed. To do this, get a prepared varnish remover. Apply to surface with a brush, let stand about thirty minutes. Applyy the second time, let stand fif-

PURITY FLOUR

Establishes the highest standard of quality ever attained in the manufacture of flour.

It contains an extraordinary amount of nourishment which makes its use a real economy.

More Bread and Better Bread---and Better Pastry, too.

4

The low cost per cup

It is hard to believe that a cup of good, rich tea only costs about a fifth of a cent, but, you see, Red Rose consists chiefly of Assam teas—the richest, strongest teas in the world.

Red Rose easily yields 250 cups to the pound. And it's a tea of rare economy and flavor.

Kept Good by the Sealed Package

635

teen or twenty minutes, scrape off with putty or case knife or steel scraper. Another application of remover which can be wiped off with a cloth may be necessray. Then sandpaper surface, using medium to fine paper. Then rub down with oil and pumice stone, wiping off all oil and polish, using a wollen cloth. The piece can then be waxed, using a mixture of turpentine and beeswax or floor wax. It is better to rub down with oil several times before applying wax.

This gives a beautiful finish to old mahogany or walnut and brings out the beauty of the wood. Many an old piece could be made a thing of bauty by this treatment.

So much furniture is finished in golden oak and is unpleasantly shiny. Try finishing a piece and see how it improves the looks. It may need a coating of stain to even up the color where it has been scraped.

Any furniture finished in a wax or fumed surface should be rubbed down with oil a few times a year to preserve the finish. Be sure and wipe off all superfluous oil. Some of the most beautiful old English furniture never had any other finish but frequent treatments of linseed oil.—Nellie M. Killgore.

CAN YOU TELL WHEN GOODS IS ALL WOOL?

The laws of our country at present offer no protection to the puchaser of textile materials. If the price of "all wool, a yard wide" goods is paid and later it is found that the material is half cotton, there is nothing left for the purhaser to do but to enter it as "loss" in her profit and loss account. To be sure there are any number of stores where the dealers are truthful about the textile materials handled, but nevertheless a knowledge of a few simple tests may not come amiss.

Sometimes slezy, thin cotton material is made to look quite firm and attractive by the use of sizing or dressing. By rubbing a corner between the thumb, the sizing is removed and the real quality of the material is apparent. In very thin material the sizing may be detected by holding the cloth to the light. The starch will show between the threads.

An examination of the raveled warp and woof threads will often reveal much. Cotton fibres are short and broken ends of cotton threads will appear fuzzy. Linen fibres are long and conesquently broken ends of linen threads are more pointed than those of cotton. Cotton material feels warmer than linen.

Some woolen materials are "made over" that is, old woolen rags and short, broken fibers, and the clippings from broadcloth are used in its manfacture. Sometimes this can be detected by unraveling the end. The short fires are loosened and fall out. —Beyl Dixon, Colorado Agricultural College, Fort Collins, Colorado.

Much of the backache from which very many houewives suffer might be avoided if women would sit down while doing some of their kitchen work. One of the kitchen stools which are made for that purpose, makes this easily possible, as they are of the right size and height to uee at most kitchen tables. An old piano stool is better still, as it is adjustable.

How often we hear women who do their own cooking say that by the time they have prepared a meal and it is ready for the table, they are too tired to eat. One way to mitigate this is to take about half an hour before dinner, a raw egg, beat it until light, put in a little sugar and milk, flavor it and drink it. This will relieve the faint, tired out feeling, and will not spoil the appetite for dinner.

WORTH REMEMBERING

Jelly cakes should have the edges pared off carefully and rolled on a damp towel.

When bacon is good and sweet the lean is firm and red, and the fat quite white.

Strong ammonia water is excellent for removing iodine stains from the skin.

Sliced raw potato can be baked instead of fried if put in a hot oven, and they will be crisp and nice.

You can always have fresh mint in your house by growing it in water.

If salt is added to flour for thickening gravies it helps to keep it from lumping.

If a frock becomes spotted with rain, press it under a damp cloth. The process is long andtedious, but the rain spots will disappear. Press always until the damp cloth is dry, then wet and move to another place.

To keep the skin of the neck in good condition there should be a complexion scrub at least once a week. Make a suds of hot water and some mild soothing soap and scrub the neck with a complexion brush. After the scrub the neck should be well splashed with cold water to harden the tissues and prevent flabbiness.

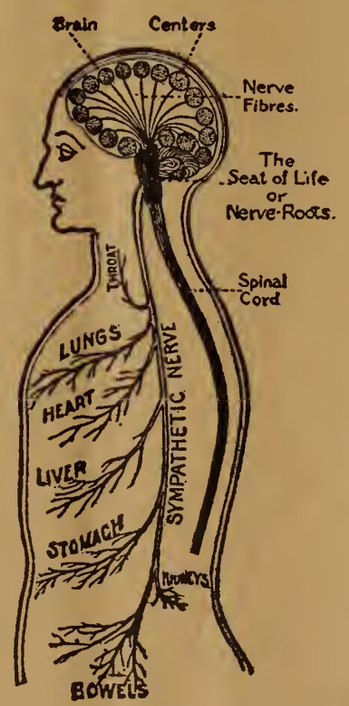
Study the Inside Nerves

WITH the brain as its centre, the nervous system reaches out to every organ of the human body. From the spinal column and from the various nerve centres the thread-like nerve fibres find their way to every nook and corner of the body, controlling all movements and action, and making a living being of the mass of flesh and bone.

Without the nerve force which is manufactured in the brain there could be no beating of the heart, no breathing of the lungs, no digestion, no activity, no life.

It is only when you think of the nervous system in this way that you begin to realize its true importance and to appreciate the far-reaching effects of any derangement of the nerves. Any break in this connection with the brain, or any pressure on the nerve fibres to interfere with the transmission of nervous energy, means helplessness or paralysis of the part affected. It may be the loss of power to use the hand or failure of the stomach to do the work for which it was intended.

To Learn the Cause of Weakened Vitality



If there is ever a time when sympathy is needed it is when the nerves give way. But you must have more than sympathy if you are to recover your nervous energy. The feeble, exhausted nerve cells must be nourished back to health by the use of such treatment as Dr. Chase's Nerve Food.

This treatment is so gentle and natural in action that it admirably suits the delicate condition of the exhausted nervous system, and at the same time is wonderfully potent in restoring vigor and strength.

A little patience is necessary in order to build up the nervous system so far run down, but as headaches disappear, digestion improves, and you rest and sleep better, you will be encouraged to continue this treatment until restoration is complete.

Dr. Chase's Nerve Food

50 cents a box, a full treatment of 6 boxes for $2.75, at all dealers, or Edmanson, Bates & Co., Limited, Toronto. Do not be talked into accepting a substitute. Imitations only disappoint.

PERFECTION Seed & Grain Separator
(Patented 1901)
The best and latest mill for Cleaning and Grading all kinds of Seed and Grain.
See nearest Agent or write for Catalogue to
THE TEMPLIN MFG. CO., FERGUS, ONTARIO

CURING MANGE

It is a stockman's axiom that steers which spend too much time at the rubbing posts cannot put on fat at a profit. It is just as true that an animal which goes to market with its neck and shoulders bare from rubbing will be discriminated against by buyers.

But the steers are not to blame. They don't rub because they would rather rub than eat. Ten to one it is because they are affected with mange, a skin disease caused by a small parasite, more troublesome in the fall and winter than at any other time of the year.

Spraying and dipping the animals with coal-tar preparations is advised for the control of these parasites. That means the work must be done before cold weather comes on. A second dipping, ten days after the lrst, will get rid of any insects which hatch out after the first treatment. Soft water is best for mixing the dips, since they do not mix readily with hard water.

A dipping vat is commonly used when a large number of animals are to be treated. For only a few, the dips may be applied with brushes or old brooms, scrubbing hard enough to dislodge the scales under which the insects are secure against anything but vigorous treatment.

When a dipping vat is used, a plunge is not enough to do much good. Every animal must have a real tub bath lasting several minutes. More good is accomplished if a brush is used to soak up the affected parts befor the animal's are dipped.

After the bath, clean quarters. The parasites breed in sheds, on the feed-racks and bunks, and on the fences and rubbing posts. Since those things cannot be dipped, a spraying or scrubbing with some of the coal-tar preparations is the logical means of cleaning up the quarters. If that is not done, the cattle will soon leave the feed-racks for the rubbing-posts again. Dipping without follow-up measures is of little value.

GRAIN FOR THE RAM

A ration formed of about 5 parts oats, 2 parts bran, and one part linseed oil meal, is an excellent grain mixture for the ram during the breeding season. A pound or a pound and a half per day for an average sized ram will be found sufficient if he is on good pasture, or being fed on hay, clover or alfalfa. If not used to grain start feeding very lightly and gradually bring up the amount to what the ram can eat with safety. The idea in feeding grain at this season is not to fatten the ram, but to put him in hearty, thrifty condition.

THE FARM HOME THAT IS UP-TO-DATE

Farm families deserve all the modern conveniences that help make farm homes more comfortable and attractive. Such conveniences are used most in the winter, and are most appreciated in cold weather when doing the regular work and going places mean exposure in all kinds of rough weather. But now is the time to make plans for them, at least come to the conclusion to do something in the way of improving the home if steps have not already been taken in that direrrtion. Woman's work in the farm home is heavy enough—too heavy in many instances—without adding to it unnecessarily. Modern heating, lighting and running water outfits lighten the farm woman's work wonderfully, their cost is not high, and they should be secured at the earliest possible moment| Most farmers love their wives well enough, but a good many seem to be perfectly willing for them to go on supplying water, heat and light in the old, laborious, inefficient way. Get all the enjoyment and satisfaction you can out of living, and start the getting right away.

SALT VERSUS MILK

Some men seem to think a cow doesn't need any salt, others go to the other extreme and load her down with it, while a third faction strike a happy medium and are bountifully repaid. True feed and water carry some mineral matter but not enough.. For the dry cow about five ohnces per week meets the average demand with an additional amount given to the producing cow in direlt proportion to the milk flow. An animal produding twenty pounds of milk per day will require an additional four ounces per week; the cow giving forty pounds, twice that much and so on. Thus the twenty pound cow could use approximately half a pound of salt per week, or better still divided into daily allowances of a little over one ounce.

Encouraging the drinking of a large amound of water by feeding excess salt has no advantage, and may even do harm. If the cows are allowed free access to a continuous salt supply they will use an ample amount but still do themselves no injury through overcrowding.

EARLY PORK CHEAPEST

Most economical gains on hogs are secured while the pigs are young, and for that reason it is advisable to finish hogs as early as possible, weighing 200 pounds when marketed. Gains on adults are expensive, and feeding them during too long a period loses money.

Weaning time is the critical stage in the life of fall pigs. Three weeks before weaning teach them to eat, supplying a box or creep which admits the little ones only. Feed a little middlings and skim-milk, adding, later, some sifted ground oats.

Pigs may be self-fed from six weeks onward. It is best, however, to start self-feeding at about ten weeks of age. With paddock feeding a self-feeder will saxe fifty per cent of the labor. On pasture, with running or a continuous supply of water, nearly seventy-five per cent of the labor may be avoided.

DATES TO REMEMBER

"The Annual Convention of the Dairymen's Association of Nova Scotia will be held at the Agricultural College, Truro, on Jan. 10th and 11th, 1918."

"The Dairy Course for Cheese and Buttermakers of the Martime Provinces will be held at the N. S. A. C., Truro, for four weeks beginning March 13, 1918."

HOW TO STOP BLIGHT

Blight in fruit trees can only be cured by cutting out all infected branches. These must be carefully destroyed to prevent further spread. Furthermore, the instruments should be sterilized after each cut in a solution of corrosive sublimate in water, 1 to 1000, as an additional precaution against infection. Paint cuts with white lead and linseed oil to protect against decay.

THE APPLE INDUSTRY

It is not more than two years since the Dominion official charged with supervision of the apple industry warned that orchards had been set out far in excess of the needs of the market and that overproduction was certain to result. A careful observer now declares that there is danger of an apple famine in Ontario. Orchards generally neglected are falling into decay. That, we suppose, is a result of the failure of labor on the land. A correspondent complains that spraying and care no longer assure a crop, and makes the suggestion, probably fanciful, that spraying, by destroying the good and bad animal parasites, has left a free field to destructive fungi, which are proof against spraying—The Weekly Sun.

The three essentials for successful calf raising are cleanliness, care and regularity.

Much caution should be exercised in the administration of drugs to pregnant mares.

At foaling time, if indoors, the mare should have plenty of room and clean bedding.

It is just as important to keep the girl on the farm as the boy, and she will be more likely to stay there if the housework is made interesting. In no way can this be as well accomplished as by modernizing the home in every detail.

This Christmas
Let Your Choice be a—
"William & Mary" Period Design $190.00
Pathephone
LET it be a Pathephone because the Pathephone has all most desirable features possessed by other phonographs in addition to its exclusive improvements.
For instance, the Pathephone plays with a genuine polished Sapphire Ball which never requires changing, instead of a scratchy, scraping needle which has to be changed after every record. The Sapphire Ball is part of the Pathephone equipment. It never wears out and Pathe' records are guaranteed to play over 1,000 times without wearing.
The Pathephone music is wonderfully full and clear and natural.
The Pathe' cabinets are the most beautifully designed of any, and will be a splendid acquisition to the most exclusively furnished home.
Do You Know—
The Pathe Sapphire Ball replaces the old-time scratchy needle.
It produces better music.
The Pathephone plays all makes of records as well as Pathe records.
Pathe repertoire includes the cream of the world's best music.
The Pathephone is a combination of French inventive genius and Canadian manufacturing brains.
The Pathephone costs no more than ordinary phonographs.
Your present talking-machine can be exchanged for a Pathephone on attractive terms. Write to us at once for name of nearest dealer and get our free catalogue, splendidly illustrated, and also containing chats on Period Furniture.
THE PATHE FRERES PHONOGRAPH COMPANY OF CANADA, Limited
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Territory open for live Agents. Progressive Merchants writing on their business letterhead will receive a confidential booklet on the possibilities of a Pathe' Agency.
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AMHERST, N. B.
X

Meat is The Best "Fighting" Food

The fighting forces of the Allies are fed heavily on meat.

There is a reason. The nutrients in meat are more readily and completely digested, and give vim and energy to a greater degree, than nutrients in cereal grains.

Cereal grains supply little fat but a great deal of starch, whereas meat, especially bacon, supplies much fat but very little starch, and fat is worth more than twice as much as starch for producing energy.

In other words, no other food is equal to meat as a producer of driving force and stamina —it is the food with "the punch."

The armies of the Allies must be ensured adequate supplies of this "fighting" food. This means that a great increase in meat production is required by Canada and the United States, because the demand for meat overseas has been so enormous that there are to-day 115,000,000 fewer animals in the herds of Europe than before the war. Great Britain, France and Italy are dependent upon Canadian and American producers to save the day so far as meat is concerned.

There is no time to be lost. The shortage of meat overseas must be relieved as quickly as possible.

Hogs The Solution

The supply of meat can be increased more quickly through hogs than through any other stock animal because hogs are very much more prolific, and they are ready for market at an early age.

The most efficient meat-making machine in existence is the hog:

(1) It produces more meat from a given amount of food than is produced by any other animal.

(2) It gives more dressed carcass in proportion to its live weight.

(3) The carcass of the hog contains more edible meat in proportion to bone than the carcass of any other animal and it is about 50 per cent. fat which is so vitally needed in the rations of our fighting men.

An Urgent Call

Canada has responded nobly to every call that has been made for men, for money and for farm produce. To-day's call for increased hog production is of the utmost urgency.

The Government now controls and restricts the profits of the Packing Houses. The hog producer is assured his fair share of the price paid by the consumer.

The Flour Mills are under a form of license with restrictions on profits. Bran and shorts will be available at reasonable prices.

The huge new corn crop of the United States, estimated at 600,000,000 bushels greater than last year's, will be available to Canadian producers. This crop is under effective United States Government control to prevent speculation.

One Commission representing the Allies will do all the buying of the meat for export overseas. This will be an influence in stabilizing the market and preventing wide fluctuations in price. This fact, considered in association with the great meat shortage in Europe, justifies confidence in the profitable possibilities of hog raising in 1918.

Save the Young Sows

Young sows which are slaughtered now only produce about 150 lbs. of meat per sow. By breeding them, many times that quantity of meat can be produced ready for market in ten to twelve months. Every pound of pork that it is possible to raise will be needed. It will take an enormous quantity to meet even a fraction of the present European shortage of 32,425,000 hogs, which is ten times the number of hogs there are in Canada to-day.

Dominion of Canada Department of Agriculture

LIVE STOCK BRANCH
OTTAWA

16

FIRST AID TO ANIMALS

(Continued from page 169)

also a knife for cutting hoofs, and a float for filing the teeth. Every dairyman shuld own a milk fever outfit, in order to be ready to promptly apply the air treatment, if necessary. He should also own a cattle trocar and canula for puncturing cattle for bad cases of bloat. Remembering a much smaller trocar and canula should be used when puncturing horses or sheep for bloat. A probang is another instrument that cattlemen should own, handy to use in case of choke.

First Aid Operations

Animals on the farm are continually being wounded and the first step to take in the care of a wound is to promptly explore the parts with a view of ascertaining if there is a foreign body, then arrest the hemorrhage to prevent waste of blood. This can very often be done by twisting the blood vessel or tying it, or by compression. The wound should then be washed with an antiseptic solution of some kind, however, remember it is important that the wound have proper drainage. Therefore, it may be necessary to do a little cutting before drainage is obtained. A wound that pockets seldom heals quickly. Small wounds about the head and neck should first be cleaned, peroxide of hydrogen applied (stitching material dipped in same), then edges of wound brought together with stitches as evenly as possible, and paint the edges of wound with tincture iodine or apply equal parts oxide of zinc and boric acid, or any other reliable commercial dusting powder. Never stitch a wound unless you believe it necessary to hold the tissues together.

The Medicine Chest

Your medicine chest should contain coal tar disinfectant, carbolic acid, aromatic spirits of ammonia, tincture of iodine, rectified oil of turpentine, raw linseed oil, Glauber's salts, epsom salts, cooking soda, borax, boric acid, salicylic acid, ginger, gentian, charcoal, powdered copperas, sugar of lead, tannic acid, castor oil, olive oil, etc. In a future letter the writer will tell how these different drugs can be best given or applied as home remedies.

W. C. FAIR, V.S.

It's a money-saver—
this book we send you free
It's no exaggeration to call this book—
"What the Farmer can do with Concrete"—
a money-saver. It makes money by saving money—for every farmer who reads it and who acts on the advice and instructions it contains. How does it save money? Simply by telling how to build farm improvement of Concrete.
The farmer nowadays realizes that he is under a terrible handicap in his efforts to make money, if he has to be constantly sinking profits in repairs. Only by using Concrete can he have buildings that do not call for repairs and painting. Only with Concrete for his building material can he have his farm fireproof, waterproof, watertight, repair proof, vermin proof and sanitary.
In our 100-page book, there are directions which enable the farmer to construct all sorts of improvements of Concrete, in odd times—with the help of his man. Send for this remarkably useful, money-saving book. Mark on the coupon the subjects which are of immediate interest to you.
WHAT THE FARMER CAN DO WITH CONCRETE
By building Roads of Concrete we can reduce the cost of living, and at the same time increase the farmer's profits on everything he sells or buys.
The welfare of the farm demands Permanent Highways of Concrete. Our farmers need them for the hauling of garden-truck, fruits and dairy products into town. On Concrete alone can this hauling be done economically. It provides the only surface that resists the wear and tear of modern traffic. Concrete is, in fact, as necessary to successful road building as it is for successful farm construction. Concrete roads, like Concrete buildings, pay for themselves in the saving of repairs.
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"What the Farmer can do with concrete"
The Canada Cement Company Limited, 117 Herald Bldg., Montreal

HOW DO YOU CURE PORK?

Here Are Some Tested Methods

Hog killing time is coming. Everybody is planning for next year, and the meat is to be gotten ready this fall. So fix plenty and some to spare. We are giving three tested methods and some points on smoking meat.

Dry Cure

Do not cut up the pork till the carcass is well chiled. Make a mixture of clean, fine salt, forty pounds, white or brown sugar 10 pounds, whte or black pepper 4 pounds, red pepper ½ pound. This will make enough cure for about 1,000 pounds of pork. If saltpeter is desired, use 2 pounds in the above mixture. It will give a red color to the lean meat, but has a tendency to harden the meat too much. Chili saltpeter may be used instead of the regular saltpeter by taking 20 per cent. less.

Rub each piece of meat thoroughly with the cure. Take special care to work the cure around the ends of the bone of hams and shoulders. Pack skin down on a table or in a box in a cool airy place. Do not place in direct sunlight or in a damp musty cellar. After four or five days overhaul the meat, rub thoroughly with the cure and repack; repeat this in about a week. Hams and shoulders should remain in the cure from one and one and a half days to two days per pound weight of piece; the latter time is safer for meat that is to be kept during the summer. Bacon shoud be in the cure a shorter time. Ten days will give a very nice mild cure to a six or eight pound piece.

Brine Cure

Make a brine by boiling 7 pounds of clean salt and 2 pounds of white or brown sugar with two gallons of water. If saltpeter is desired add one fourth pound. This gives about enough to cover 100 pounds of pork when well packed. Sprinkle a little clean, fine salt in the bottom of the barrel, rub each piece of meat lightly with the salt, sprinkle a layer of salt between each layer of meat. Put on a board and weight down with a rock. Alllow to stand over night. Tip barrel on side and allow the liquor to run out. Cover the meat with the cold brine and allow to stand in a cool place for four or five days. Overhaul, repack and cover with the same brine. Repeat in about a week. Give the meat the same length of time for curingas with the dry cure.

When the curing is complete wash off the excess cure and hang in the smoke house.

Plain Salt Cure

Make a brine of ten pounds of salt, two ounces of salt peter and four gallons of water. The carcass should be cut into smaller parts than for the brine ure. Pieces about six inches square will be the best. Put meat in a barrel and pour brine over it. When cold, cover and weigh down to keep meat under the brine. The pork should be kept in the brine until used.

Smoking the Meats

Pickled and cured meats are smoked to aid in their preservation. The smoke seals up the pores, acts as a vermifuge, aids in drying, and adds flavor to the product.

Green hickory or maple wood smothered with sawdust of the same material gives the best results. Hard wood are always preferable to soft woods. Resinous woods (pines, firs, spruces) should never be used, because they are likely to impart bad flavors to the product. In the production of Westphalia hams, Juniper wood and berries are used.

Before putting meat into the smoke house take it out of the brine and let it drip for two days. In cases where the brine was strong, it will be very advisable to soak the pieces in cold water over night to prevent a crust forming on the outside when it is drained. Then suspend all the meat so that no two pieces come in contact, as this would prevent uniform smoking.

A slow fire may then be lighted, warming up the meat gradually. In cold climates it is best to keep the fire going at a steady temperature until the smoking is completed in from 24 to 30 hours.

Smoke will not penetrate frozen meat. Flies should be excluded by keeping the house dark and the meat cooled by opening the doors and ventilators.

A dry, cool cellar or attic with free circulation will be the best place in which to keep smoked meats at all seasons, provided it is kept dark and the flies excluded. If it is desired to keep the meat for a long time, wrap it in waxed paper, then in muslin or canvas and hang it in a dry, cool place.

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shortborns and Border Leicester Sheep. A number of choicely bred animals for sale.

G. C. Cossar, Prop. J. Meiklejohn, Agent.

SHORTHORN CATTLE

Our present offering is a number of pure bred calves, both sexes. Let us quote you a price on a nice, dark red, young bull calf.

J. E. HETHERINGTON
Codys, N. B.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls, ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milcb Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. S. Bloomfield Farm

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $1.50 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm

OFFERS FOR SALE:

Two cboice young Holstein Bulls, 15 and 19 months old, sired by Dutcbland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Tbree of tbem world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

GUERNSEY BULLS!

I offer for immediate sale, the Guernsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of tbe breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

COCKERELS—Barred Rocks, S.C. Rbode Island Reds and White Wyandottes at $1.50 each.

We breed for eggs and get them every day in the year.

YEAR OLD HENS—One dozen Barred Rocks. Half dozen Reds at $1 each. A pen of Red Sussex three hens and a very fine cock bird.

REGISTERED HOLSTEINS — Two yearling heifers, one eight months bull, two bull calves, would also sell two cows.

Chester White Pigs for sale.

N. W. EVELEIGH,
Sussex, - - - N. B.

SPRINGVALE AYRSHIRES!

Our present offering is four bull calves eight to twelve montbs old all from heavy milking dams. One eacb from Rosalind and Nita, each a prize winner in the dairy tests Amherst F. S. Show over all breeds and grades.

Inspection invited.

FRED S. BLACK & SONS
AMHERST, N. S.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

For Milk, Butter, Cheese, Veal, Holstein Cows stand supreme. If you try just one animal you will very soon want more. Write the

Holstein-Friesian Association
W. A. Clemons, Sec'y, St. George, Ont.

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

JERSEYS

Young Bull, solid color, dropped Sept. 1st, 17 Out of R.O.P. dam and by a noted sire—combining the blood of Golden Lad, Tormentor and Flying Fox.

SHORTHORN:—

Young Bull, all red, dropped March 17th, 1917, sired by first prize winner of his class at Halifax, 1915, and a grandson of the grand champ on out of a bighly bred and good milking dam.

Two Heifer Calves, all red, out of splendid milking dams and by one of the best sons of "Stanley Monarch." One dropped Nov. 3rd, 1916, the otber April 29th, 1917.

Young Bull Calf, dropped Sept. 26th, 1917, dark red, sire and dam, both first prize winners at Halifax. Address

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

Maple Green Farm Holsteins

Just now we are offering some fresh calv d cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. butter in 7 days.

Herd sires in service. "Maple Grove Mercena Mercedes," No. 11727, tbe sire of our 26.54 lb. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter brother to our 25.05 lb. Jr. 3 year old.

For particulars write

R. L. HICKS
Dalhousie Jct., - - N. B.

Spring Brook Ayrshires

Present offering, several choice cows and two heifers each twelve months old, also two bulls, one twenty-two months the other twenty months old. All of good size and in splendid condition and from good milking strain.

Write us your needs in the Ayrshire line. We have started many young breeders on the right tract, and have replenished the herds of some of the older breeders and exhibitors. We can supply your wants.

McINTRYE BROS.,
Sussex - - - N. B.

GLENRANE STOCK FARM

We are offering some very fine pure bred registered calves from 2 weeks to 8 months old These calves are sired by "Homestead Hengerweld Rooker" ¾ brother to a 26 lb. jr. 3 yr. old. They will be sold reasonably if taken at once. We also have several litters of very fine York pigs.

ROBERT C. HICKS,
West Bathurst, - - - N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

BUTTER PARCHMENT
Maritime Farmer Office

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st, 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown, with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, tbe world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as bigb as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows; and one ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT.

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

Our Shorthorns bave wintered well and we bave a fine bunch of Calves for sale at any age required Are booking orders for Rams for fall delivery. Our Lambs weigbed from 100 to 115 lbs. last October and tbe present crop bave come strong and extra good type.

C. A. ARCHIBALD, - - Clifton, N. S.

NETHERLAND FARM, Hammond River, N. B.

HOLSTEIN CATTLE AND YORKSHIRE SWINE
WM. S. HARDING, PROP.

We rae all sold out of last years crop of calves. We are now offering some young bull calves sired by Sir Foforit Schuiling. Also a fine litter of young Yorkshire pigs.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewbere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

For sale at present, one bull 20 months old; two bulls 10 months old, almost fit for service. Several bull calves that are dandies and as well bred as you could wish. Also can spare a few heifer calves from one to six months old. Inspection invited.

S. DICKIE & SON, - Central Onslow, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

Present offering:—Bull Calf, month old. Weighed 112 lbs. at birth. Dam made nearly 600 lbs. butter last year and sire's two nearest dams records average 25 lbs. butter in seven days. This calf is a splendid individual and fit to head any herd when mature. Price reasonable if taken soon. Get him if you want to improve your stock.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

Registered Jersey Heifer

We offer for sale tbe registered Jersey Heifer, "Pride of Rose Bank," 3 years old, milking sired by Foxhall's St. John O'Dreamwold, wbose dam gave over 10,000 lbs. milk in a year. Also Peerless Incubator, Barred Rock and White Leghorn Cocks and Cockerels, which would exchange for Barred Rock Hens.

ORCHARD HILL FARM
Brown's Flats, - N. B.

LAST NOTICE !

I still have left one cow, tbree years old, freshened in August; one two year-old heifer, bred; two heifer calves, two montbs old; one bull, five months old. Special prices to clear this stuff out as I want to close out by the end of the year. Learn something more about tbis stock, it may pay you—only a stamp.

T. J. HAWKINS,
Stewiacke, - - Col. Co., N. S.

WHY WHEAT IS NEEDED

(Continued from page 167)

years the wheat loaf has been the basis of life in Europe, with the exception of Italy. The art of household baking has long since been lost. Most of the bread is baken by bakers. For this reason alone it is almost impossible for them to substitute corn bread, which cannot be distributed by bakers. Furthermore, the actual household machinery of baking—ovens, etc.—has long since been out of existence in most European homes."

There are also serious transportation difficulties in connection with the sending of large supplies of other cereals than wheat to the Allied countries. With the exception of Italy they have few corn mills and corn meal is not a sufficiently staple product to be suited to transportation across the ocean. Moreover, corn meal requires more shipping space than does the same weight of wheat flour.

It has been estimated that the Allies will need to import, on the basis of their pre-war consumption, about 577.000,000 bushels of wheaf or the equivalent of wheat flour. The urgent necessity of economizing in the use of shipping obliges them to depend practically upon North Amrica for their cereal supplies. And on the basis of normal consumption here, North America's exportable surplus will not greatly exceed 200.000.000 bushels of wheat. The aggregate wheat crop of the Western European Allies has been estimated at not more than 400.000,-000 bushls. Adding to this the North American exportable surplus of 200.-000,000 bushels we have only 60 per cent of the Allies' requirements, leaving 40 per cent to be made up with other cereals. But, as already has been explained, a good bread loaf cannot be made by the bakers of Europe with only 60 per cent of wheat flour. If the people of North America, by reducing their consumption of wheat and substituting other cereals, will increase by 150.000.000 bushels this continent's exportable surplus of wheat, the Allied countries of Western Europe will have enough wheat flour to hold mixed cereals together in a baker's loaf.

North America's consumption of wheat on the normal basis is about 600 000,000 bushels, so that to spare enough to give our Allies overseas a good loaf, every man, woman and child, on the average, must reduce his or her consumption of wheat flour by at least one-quarter and substitute other cereals to make up the difference.

TRURO AGRICULTURAL SHORT COURSE

We commend to the attention of our readers the Short Course at the College of Agriculture, Truro, advertisement of which will be found elsewhere in this issue. No other Short Course in Canada has, for a succession of years, enrolled such large numbers of students as the Truro course and the one to be held from Jan. 2nd to 10th next should be no exception to the preceding ones. In former years, many students have attended from New Brunswick and Prince Edward Island as well as from Nova Scotia, and this year the College again extends an invitation to all from these sister Provinces who can make it convenient to attend. It is worth while going to Truro, if for nothing else than to examine the magnificent college herd of cows in which during the past year, some outstanding milk records have been made. Included among these are the two year old College bred Ayrshire heifer MacGregor's Laurie May, that has just completed her first lactation period with 13,060 lbs. of milk and 638 lbs. of butter, and the two year old Holstein heifer College Canary Rosie, that likewise in her first lactation period has completed the year with 15,193 lbs. of milk and 632 lbs. of butter to her credit.

A special feature of interest to many Maritime Province farmers will be the tractors, with which the Nova Scotia Department of Agriculture has been experimenting during the past season. One at least of these, the famous Ford tractor will be on exhibit and will be operated during the course.

COST OF HORSE KEEP AND HORSE LABOR

In two recent issues, tables showing the cost of keeping horses during winter at Indian Head Farm, and the cost of keeping a farm horse for a year on another Saskatchewan farm were given. Herewith is shown an itemized statement of the annual cost per horse of 154 horses in Illinois, as given in a recent bulletin of the U. S. Department of Agriculture. The statement follows:

Feed and Bedding	$68.75
Labor	13.99
Interest	7.90
Use of equipment	3.82
Shoeing	.86
Depreciation	3.46
Miscellaneous	2.12
Total	$105.85

The same bulletin shows the annual cost of 72 farm horses studied in Ohio was $129.43, and on 90 head in New York, $159.81. One item in the U. S. table—net loss on colts—is disregarded here, also their credits for manure which amounts to $5.24, $8.20 and $13.36 in the three states respectively, also small items for appreciation and colt profits.

Taking the Illinois figures which, considering the crops grown on the farms where horse costs were studied, were most comparable to our own, the following information is given: Average value of horses $158; "stabling cost" includes 5 per cent interest on the average investment and insurance, taxes, labor, repairs and depreciation; "use of equipment" items are made up of a charge of 5 per cent interest on harness and miscellaneous equipment, repairs, insurance, taxes, and depreciation; "miscellaneous costs" embrace veterinary services, medicine, salt, etc.

In Illinois, the average number of hours worked per year by the 154 horses was 1,053. the average feed cost per hour worked was 9.56 cents. This was considerably lower than the average cost in either of the other two states. On one farm where the horses worked from 500 to 600 hours per year the feed cost per hour was 19 cents. This was due to feeding with expensive feeds though working an average of about 2 hours per day during the working days of the year. On six farms where the horses worked from 80 0to 1300 hours per year the average feed cost per hour was less than 5 cents, due to the judicious use of cheap feed and pasture, when the horses were idle. As feed is the largest item in the cost of keeping a horse and the feed cost per hour averages wll over 10 cents per hour for all the horses studied, it woul dseem that of the various ways of keeping down the cost of horse labor one of the best is to keep the horses busy. From the figures under review it is apparent also that large farms permit of more efficient use of horse labor than small farms. On large farms there were 22.2 acres in crop per horse while on the small farms there were but 16.8 acres per horse.

Fertilize and cultivate your garden this fall in anticipation of an early start next spring. Put away your garden tools cleaned and in good repair. If you have saved some good seed of your own growing such as beans, peas, lettuce, corn, potatoes and beets, put it away carefully in a safe, dry place.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co.. N. B

Ayrshire Cattle

C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

Shorthorn Cattle.

Walter E. Eaton, Upper Cunard, Kings Co., N.S.
Isaac Chipman & Son. Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Shorthorn Cattle !

We have for sale five pure bred Bulls, ages from 12 to 18 months Also some Heifers from one to three years old. Write us for particulars.

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
Sackville, N. B.

FOR SALE

A pen of 8 S.C. White Leghorn Layers 6 pullets and 2 yearlings, of a trap-nested bred-to-lay strain. Price $15.00. Barred Rock, White Wyandotte, and S.C.R.I. Red Cockerels; fine large birds of good type and color, from strains that are bred for quality and egg production, $3.00 each. Only a few left. Write for further particulars, or order direct from this advertisement.
H. M. Mc MONAGLE, Fredericton, N. B.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.
Write for particulars
W. H. HENRY
Shubenacadie - - - N. S.

FOR SALE

A handsome, well-grown Guernsey bull. Sire purchased from the Experimental Farm, Ottawa; dam of equally good breeding, and a heavy producer. Will be sold reasonable. Full particulars on inquiry.
SARAH E. MOSES SMITH,
Woodwards Cove, - - - N. B.

Fir Shade Farm Dual-Purpose Shorthorns !

Several years ago I imported from Ontario three Dual-Purpose Sborthorn animals, and now have in my stahle at Rothesay eigbt representatives of this breed. Two of the females are entered in the Record of Performance, and so far have done excellent work. If you feel disposed you might drop in and see these the first time you are in the vicinity. Perbaps some time when you are coming to the city you would let me know, when I could arrange to go to Rothesay with you.
P. R. L. FAIRWEATHER. St. John,N. B.

FOR SALE !

We have for sale in Shorthorns of milking blood, Roan Bull, 18 months old, large and well built, also several Bull Calves. Heavy and Light Horses.
L. M. ANDERSON,
SACKVILLE, - - - N. B

Willow Farm Ayrshires

FOR SALE—One P. B. Ayrshire Bull, 14 months old, whose dam and grand dam qualified in R. O. P. with large records; also one P. B. Ayrshire Bull, 20 mos. old; also one P. B. Ayrshire Cow, 6 years old, due to freshen in Dec.; qualified in R. O. P. test with 10150 lbs. milk and 424 lbs. fat in 329 days.
Apply to
ARTHUR S. DENNIS,
"Willow Farm" Stewiacke, N. S.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex, N. B.

GEESE—Two large Geese and one Gander fit for breeding. The first eight dollars takes them. F. Baxter, Harcourt, Kent Co., N. B.

FOR SALE—Choice Tamworth boars and Collie dogs. J. Titus Barnes, Apohaqui. R. R. No. 3.

FARM FOR SALE five miles from Sydney. Price, Thirty-five hundred. Two thousand cost required. If interested write Ernest McLean, Coxheath.

BERKSHIRES FOR SALE—Sows bred, boars ready for service, young pigs ready to wean. All choice stock. Write if you want something good. Valley View Farm, Truro, N. S. J. R. Semple & Son.

FOR SALE—Aberdeen Angus Bull, 22 months old. Was first and champion at Halifax, 1917. Write for particulars.—GEORGE A BLACK, Westmoreland Point, N. B.

AYRSHIRE BULLS—One 22 mos., G dams on both sides 15,000 lh. cows, hred at Agricultural College; one out of fifty lh. cow eleven months old.—R. J. MESSENGER, Lawrencetown, N. S.

LADIES WANTED to do plain and light sewing at home, whole or spare time; good pay; work sent any distance, charges paid. Send stamp for particulars.—NATIONAL MANUFACTURING CO., Montreal.

Willow Glen Shorthorns

Entire show herd for sale. See our record at the recent Halifax show. All prize-winners from three year old cows down bred by myself, and sired by Champion and Sire of Champion Stately Monarch. Write for particulars.
A. N. GRIFFIN,
New Minas - - - - N. S.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

McINTYRE BROS.
SUSSEX, - - N. B.

SHORTHORNS FOR SALE !

Two year old bull, "Earl Kitchener" (100224), sired by "Roisterer" 91015 (122490), superior strain. Three hull calves—one sired by "Earl Kitchener," all related. Would exchange old bull for another (to avoid inbreeding) and the calves for heifers. Also wish to sell pure-hred Clydesdale colt, foaled Aug. 22nd. His dam was champion mare, any age, at Charlottetown Exhibition 1913-14-15.
WESLEY G. GRAVES,
Aylesford, - - - Kings Co., N. S.

Spruce Grove Farm Guernseys

FOR SALE—Four Bulls fit for service also some Yearling Heifers and a few Bull Calves.

D. C. McKAY & SON,
SCOTSBURN, - - Nova Scotia

SUCCESSFUL DAIRYMEN have found that it pays to dehorn their cows. Drovers pay more when they are dehorned, and shippers are insisting on having cattle dehorned. The KEYSTONE DEHORNER is the most effective for the purpose. Write for booklet. R. H. McKenna, 219 Robert Street Toronto.

Try an Ad in the FARMER

SOLID COMFORT

"SERVICE" Stoves are unornamented, but if quick heat and good baking are matters of importance to you, a PLAIN STOVE at reasonable cost is worthy of consideration. There are very very many FREDERICTON-MADE Stoves in use in Eastern Canada. The steady demand gives us the impression that Plain Stoves are still used and still wanted, and we KNOW that each of our "SERVICE" Stoves is a source of great COMFORT to its owner. Heating-Stoves and Cooking-Stoves, and Furnaces for wood or for coal, they are PLAIN BUT SERVICEABLE.

FROM

Stoves and Furnaces let us direct attention to our "YORK" Turnip-Pulpers with vertical disk and side basket. They are extensively used in Eastern Canada, and each year brings an increased demand for these well-thought-of Root-Cutters.

ONLY GOOD GOODS

Besides the above-mentioned lines we manufacture Iron Pots, Tea-Kettles, Griddles, Frying-Pans, Bean-Jars, Oat-Boxes, Pig-Troughs, Cow-tail Holders, Window Weights, Horse Weights, Sled Bench Castings, Wagon Boxes and Nuts, Etc.

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The Perfect Light for Farm Homes

—SOLD ON APPROVAL

The construction of this lamp is perfect. The light does not waver, it is steady as the sun and the nearest approach to daylight that science has discovered. Fine to work or read by, colors can be so distinguished by this light that it is possible to do even the finest needle work under its rays. TAKE CARE OF YOUR EYES, MONEY CANNOT REPLACE THEM. BY INSTALLING OUR LAMPS, THE EYE STRAIN WILL BE RELIEVED AND YOU WILL FIND LIFE A PLEASURE. Remember we sell the lamps on approval and you are the judge and jury Certainly we could not do that if they were not what we claim, so don't hesitate. Send for particulars—NOW —TODAY.

STYLES FOR HOMES, STORES, FARMS, SCHOOLS, CHURCHES, HALLS, STREETS, RINKS, ETC. ALL STYLES OF MANTLES, SUPPLIES, ETC., AT LOWEST PRICES.

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MERRICKVILLE, ONT.

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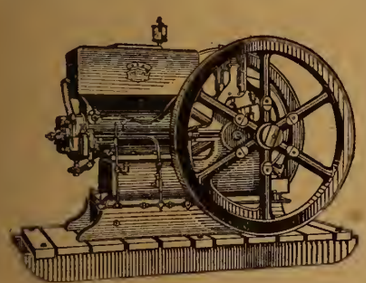
Stationary, Mounted and Traction

We manufacture the most complete line of Engines on the market. Send for Catalogues.



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is the best that money can buy.

We manuracture complete lines of

Wind Mills, Grain Grinders, Steel Pole and Wood Saw Frames, Pumps, Tanks, Water Boxes, Concrete Mixers, etc.

Agents Wanted in Unrepresented Territory

GOOLD, SHAPELY & MUIR CO., LTD., BRANTFORD, ONT.

A. McCAUSLAND, Victoria Hotel, St. John, N. B., Maritime Representative

Agents Wanted

Farmers in the Maritime Provinces have learned by experience that they can raise from 50% to 75% greater crops without additional land by using Ontario Fertilizers. It is easy to sell these high class fertilizers to the farmers who are eager to get more production and secure the splendid high prices now prevailing. Fertilizer helps to offset their labor problem. Farmers and others are invited to write us for full particulars about our attractive selling proposition to agents.

Ontario Fertilizers Limited,

West Toronto, - Canada

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Volume 23. SUSSEX, NEW BRUNSWICK, JANUARY 8, 1918. Number 7.

Care and Management of the Dairy Herd

By R. S. Hulce, Associate in Milk Production, and W. B. Nevens, Assistant In Dairy Husbandry, University of Illinois

Introduction

Intelligent care of the dairy herd is essential to profitable milk production. In order that each animal may contribute its share to the income derived from the herd it must receive individual attention and care, and have the benefit of those general practices in the management of the herd which have been found by dairymen to give the best results. The following suggestions on the care and management of the dairy herd are intended to apply to general dairy conditions in Illinois rather than to all specialized phases of milk production.

Problems of General Care

Regularity

Dairy cows readily become accustomed to a regular daily program any interruption of which acts as a disturbing influence and tends to cause a decrease in milk production. There should be certain hours for milking and the same order of milking should always be followed. Thus, at the regular time the cows release the muscles controlling the milk ducts so that the milk is given down more quickly and easily. Regularity in milking is one of the important factors in keeping the milk flow constant.

It is immaterial whether the cows be fed grain before or after roughage, but it is desirable that the feeding be done at regular intervals and that the feeds always be given in the same order. Feeds which have considerable odor are usually fed after milking in order to prevent the absorption of odors by the milk.

Kindness

In the hurry of getting chores done, the dairyman sometimes forgets that dairy cows are naturally of a nervous and excitable disposition, and that under conditions of excitement or fear the milk flow is materially lessened. Driving cows on the run, chasing them by dogs and with loud shouting are not allowed on a well-managed dairy farm. In the stable all operations should be carried on quietly. When a cow kicks there is usually a reason for it; the teats may be hurt by the milker or the cow may be frightened. At such a time a little care in removing the cause and pacifying the cow will often prevent further trouble. Many good cows become confirmed kickers and consequently less profitable as a result of lack of careful observation and kindness on the part of the attendants.

Care at Freshening

The work of milk production, particularly in the case of a heavy producing dairy cow, coupled with that of the production of offspring, is a severe tax upon her vitality. In order that a cow may begin her period of lactation in good physical condition, it is desirable that she be given a rest of six to eight weeks previous to freshening. The length of the rest period is determined, not by any hard and fast rule, but rather by the amount of time necessary to put the cow in a good condition.

Drying-off the Cow.—Two of the essentials in reducing the milk flow are milking less frequently and supplying less feed. If the feed supply is decreased and the cow is milked as usual, since the act of milking is a stimulus to milk secretion, she will draw upon the surplus energy stored in her body in order to produce a normal amount of milk. Therefore, if the feed is reduced the milkings should be less frequent. When cows are giving a large amount of milk the drying-off process may be begun by leaving part of the milk in the udder at the regular milking period. After a few days one of the daily milkings may be omitted entirely. As the milk flow decreases, the milking may be done once in two days and then once in three days until the amount has been reduced to three or four pounds daily, when the cow need not be milked further. It is important that the drying-off process take place gradually in order to prevent injury to the udder.

Feeding During the Rest Period.—During the rest period the cows should be fed so that they will be in good flesh at the time of freshening. It has been shown that cows of the dairy type which are in good flesh at freshening tend to produce milk of a higher butter-fat content than those that freshen in very poor condition. The grain mixture to be fed during this period may consist of two parts corn meal and one part bran or ground oats. If good pasture is available, grain may not be necessary.

Care Just Before Freshening.—It is important that the ration during the latter part of the rest period be somewhat laxative. This is a matter deserving special attention if the cow is receiving dry feed. In this case, it is important htat she be fed a good quality of legume hay, such as clover, alfalfa or cowpea, or other laxative feed, such as silage. Any one of th following grain mixtures, which are somewhat laxative, may be used to supplement the roughage.

Equal parts of bran and ground oats

Two parts ground oats and one part oil meal

Equal parts ground oats, bran, and oil meal

Two or three days before the cow is expected to calve, she should be placed in a clean, dry, and well-bedded box stall. During the day in mild weather she may be turned out-of-doors, as a moderate amount of exercise during this period is beneficial. If a laxative ration has not been fed, a drench of Epsom salts, should be given. When a cow is given careful attention previous to freshening, fewer of the troubles attendant upon calving, such as retention of the afterbirth, milk fever, and udder troubles, are experienced.

After Freshening.—After the calf is dropped, careful attention should be given to the comfort of the cow. In summer it is well to spray her with a fly repellant, and in winter cold drafts should be avoided. If the temperature of the bran is very low, blanketing the cow for a few days is desirable. The stall should be supplied with an abundance of dry bedding.

Just after calving, the cow should not be allowed to become chilled by drinking cold water. The drinking water should be lukewarm during the first day at least, and for a few days should be not colder than that coming from a deep well.

Swollen Udder.—Some inflammation is usually present in the udder at freshening which causes a swollen and caked condition. By rubbing the udder vigorously with the hands several times a day or by allowing the calf to nurse for a few days, the inflammation may be reduced. When the udder is not greatly inflamed or caked, the swelling will usually subside in a few days provided milk is being given from all quarters. If the udder is severely caked, special treatment may be applied.

Feeding after Calving.—It is very important the cow be fed grain sparingly for several days after calving, so that she may gradually become accustomed to the feed. A small quantity of bran fed as a warm mash proves helpful. The grain ration which was fed just previous to calving may be fed for a few days beginning with the second or third day, after which the grain may be changed to the mixture which the cow is to receive during the lactation period. If the udder is not severely inflamed or caked, four or five pounds of grain per day may be fed on the third or fourth day and the amount increased at the rate of one-half pound per day. The grain may be increased as long as the cow continues to respond with a proportionate increase in milk flow. A legume hay and silage may be given in such quantities as the cow will consume. When these feeds are used, the amount of grain fed to Jersey cows should be about one pound per day to each two and one-half to three pounds of milk produced daily, and to Holsteins about one pound to each three to four pounds of milk.

Length of Time Cows are Profitable

Cows usually reach their maximum production between the ages of six and eight years, after which time the annual production begins to decrease. When the heifer calves from the best cows only are raised, one-fifth to one-fourth of the cows in the herd may be replaced by the hifers each year; in this way, or when purchase is the method employed in replacing cows, few need be kept beyond the age of eight years.

Cows are less profitable milk producers during their first lactation period than when they become mature, since part of the feed is used for growth. The loss occasioned by this additional cost of milk production is usually offset by the better prices which can be secured for the mature cows when they are sold before passing their prime. Good cows may be profitable producers up to the age of fifteen years, but comparatively few are kept to that age except for breeding purposes. After cows reach the age of eight years, the uncertainty as to how long they will continue to be profitable on account of failure to breed and their lessened resistance to ailments becomes more marked. The uncertainty is probably greater where forced feeding in record making is practiced.

Replacing Cows In the Herd

One of the discouraging but usually certain losses involved in milk production is the depletion of the milking herd thru accident, failure to breed, or diesase. It is sometimes a serious problem whether to maintain the normal quota of the herd simply by the purchase of cows of milking age or by rearing the heifer calves from the best cows in the herd.

Purchasing.—When cows are replaced by purchase of others, the labor required in caring for the calves is reduced to a minimum, since the calves are sold at an early age. Under certain conditions, such as inadequate barn facilities for raising calves, limited pasture, and high prices for whole milk, purchase may be the more feasible method for maintaining the desired number of cows in the herd. However, the danger of the introduction of disease into the herd is greatly incrased by the purchase of animals. In purchasing cows on the open market records of previous production are usually lacking, so that judgment as to their productive ability is based on physical appearance alone. Some cows thus purchased prove disappointing as milk producers, since conformation is not always a reliable index to the value of dairy cows.

Rearing Dairy Animals.—When the heifers are reared to replace the cows, there is less opportunity for the introduction of disease, altho if calves are fed on unpasteurized skim milk or whey from a creamery or cheese factory, there is a chance that they may become infected with diseases from other herds. The skim milk or whey should be thoroly pasteurized at the factory before being returned to the farm.

When a bull capable of transmitting high milk-producing qualities to his offspring is used, the rearing of the heifer calves from the best cows is usually an economical and certain method of securing high-producing animals

to replace the aged cows. One of the greatest advantages in rearing such calves is that it is possible not only to maintain the standard of quality in the herd, but to gradually increase its production.

Season for Freshening

Some of the factors which determine the season at which the herd shall freshen are: length of the pasture season, amount of labor available, and market demands.

Spring Freshening.—Where it is possible for the herd to secure an abundance of good feed on pasture thruout a considerable portion of the year, it is usaully desirable to have the cows freshen in the spring in order htat one may take advantage of the inexpensive feeds at the stage of lactation when the largest amount of nutrients in the ration must be supplied.

Fall Freshening.—There are several advantages in having the cows freshen in the fall provided there is a sufficient supply of labor available during the winter months. Cows freshening in the fall may be fed so that they will produce a good flow of milk during the winter months. During the latter part of this period the flow tends to decrease, but it will be increased with the stimulus of spring pasture. The period of smallest flow will be during the latter part of the summer, when conditions are not favorable for high milk production and labor can be used to advantage in other farm work. This tends to equalize labor to a greater extent than when the majority of the cows freshen in the spring.

Calves born in the fall make good growth during the winter and are able to make some use of the pasture in the spring. Calves born in the spring are not sufficiently mature to make much use of pasture even in the latter part of the same season, on account of the annoyance of heat and flies.

When the milk is sold to a whole-milk market, it may be more profitable to have the cows freshen in the fall, since prices for whole milk are usually higher in winter.

Breeding Age for Heifers

The age at whch heifers should freshen depends largely upon their development and the season when it is desired to have most of the cows freshen. Altho the larger breeds do not mature at so early an age as the smaller ones, in most cases it is possible by liberal feeding to obtain sufficient growth so that heifers may profitably be bred to freshen at two years of age. It is seldom desirable for a heifer to freshen at an earlier age.

In deciding upon the time to breed, the size and development should be given greater consideration than the age, since it is important that the heifer have good growth by the time she freshens. However, if allowed to become too mature before breeding, especially in the case of animals that are heavily fed, there is sometimes difficulty in getting the heifers in calf.

It is undesirable to have cows freshen during the latter part of the summer because their milk production will be seriously hindered by hot weather, flies, and dried-up pastures. Rather than have heifers freshen during the summer months, it is advisable to postpone their breeding so that they will freshen during the cooler season.

Kings County Standing Field Crops Competitions for 1917

Name and Address	Oats Rank	Oats Score	Oats Award	Wheat Rank	Wheat Score	Wheat Award	Barley Rank	Barley Score	Barley Award	Buckwheat Rank	Buckwheat Score	Buckwheat Award	Turnips Rank	Turnips Score	Turnips Award	Total Awards
R. H. Rouse, Corn Hill	1	94.75	$6.00			$			$			$			$	$ 6.00
F. Leslie Walker, Lr. Millstream	2	94.5	5.75	19	88.5	1.50	10	84.75	3.75	14	92.25	2.75	5	93	5.00	18.75
H. S. Secord & Sons, Penobsquis	3	94.25	5.50	11	90.75	3.50							18	88	1.75	10.75
W. E. Wallace, Penobsquis	4	94	5.25	3	94.5	5.50				6	94.5	4.75	38	77.75		15.50
Jas. Manchester, Apohaqui	5	93.25	5.00													5.00
W. E. McLaughlin, Lr. Millstream	6	93	4.75	9	91.5	4.00	3	91.5	5.50	7	94.25	4.50	7	91.5	4.50	23.25
D. A. Coates, Corn Hill	7	92.75	4.50							2	95.25	5.75	36	79.75		9.75
Chester Keith, Corn Hill	8	92.6	4.25	4	94	5.25	4	91	5.25	26	88.25		28	85.25		14.75
W. O. Dunfield, Anagance 2	9	92.5	4.00													4.00
A. D. Freeze, Penobsquis	10	92.25	3.75							23	89	.50				4.25
Cameron Dunfield, Anagance 2	11	91.75	3.50							18	90.25	1.75				5.25
H. B. Parlee, Sussex	12	91.5	3.25	16	89.5	2.25	5	90	5.00	8	94	4.25				14.75
G. O. Dunfield, Anagance 2	13	91.25	3.00										35	80		3.00
F. H. Rouse, Corn Hill	14	91	2.75	23	85.75	.50							37	79		3.25
J. E. Marr, Corn Hill	15	90.75	2.50	26	84.5					11	93	3.50	39	73.5		6.00
John Brown, Corn Hill	16	90.5	2.25				7	89.5	4.50							6.75
A. F. Stockton, Corn Hill	17	90.25	2.00							4	94.75	5.25				7.25
J. W. Burlock, Corn Hill	18	90	1.75										33	82.5		1.75
Sam Coates, Corn Hill	19	89.75	1.50				12	84	3.25							4.75
J. Floyd, Bloomfield Sta.	20	89.6	1.25				8	86	4.25	3	95	5.50	30	84.25		11.00
John McCrossin, Corn Hill	21	89.5	1.00										31	84		1.00
T. Brown, Corn Hill	22	89.25	.75							24	88.75	.25				1.00
W. A. Erb, Sussex	23	89	.50	22	86	.75							37	79		1.25
H. Yeomans, Sussex Corner	24	88.75	.25	15	89.75	2.50				25	88.5		23	86.5	.50	3.25
Geo. L. Slipp, Sussex	25	88.5											31	84		
H. N. Flewelling, Apohaqui 3	26	88								20	89.75	1.25				1.25
Warren Hall, Penobsquis	26	88								16	91	2.25				2.25
H. B. Dodge, Hammond River	26	88		8	91.75	4.25				17	90.5	2.00				6.25
F. G. Hughson, Anagance 2	27	87.75								9	93.75	4.00	25	86.15		4.00
Geo. E. Hornbrook, Mt. Middleton	28	87.5		29	79		6	89.75	4.75	28	86.5		26	86		4.75
W. S. Harding, Hammond River	28	87.5											8	91	4.25	4.25
T. G. Perry, Butternut Ridge	29	87.25		27	84.25		11	84.5	3.50	29	86		21	87	1.00	4.50
D. H. Dickie, Corn Hill	30	87														
W. H. Venning, Sussex	30	87		20	88.25	1.25	2	92.5	5.75	5	94.6	5.00				12.00
Jas. McFarlane, Sussex Corner	31	86.5		7	92	4.50				34	78.5		13	89	3.00	7.50
Leonard Bell, Sussex	31	86.5		18	88.75	1.75							16	88.25	2.25	4.00
W. F. Mosher, Sussex	32	86		24	85.5	.25				13	92.5	3.00	20	87.25	1.25	4.50
W. A. Dickie, Corn Hill	32	86		30	79											
David Fennell, Corn Hill	32	86								30	85.5					
Wm. Bonnell, Sussex	32	86		13	90.25	3.00				10	93.5	3.75	11	89.25	3.50	10.25
M. K. Raymond, Norton Station 3	32	86								27	87.5		3	93.5	5.50	5.50
A. D. Murray, Penobsquis	32	86														
Edgar Patterson, usSsex	33	83											34	81.75		
H. R. McMonagle, Sussex Corner	34	82.5														
Ira Pickel, Bloomfield Station 1	35	81.95														
E. Roy Raymond, Norton 3	36	81.5								19	90	1.50	2	94.25	5.75	7.25
McIntyre Bros., Sussex Corner	37	81		14	90	2.75				33	84.5		4	93.25	5.25	8.00
Jas. McElroy, Sussex Corner	38	79.5		10	91	3.75				35	74.5		10	89.5	3.75	7.50
J. Titus Barnes, Apohaqui	38	79.5		17	89	2.00	9	85.75	4.00	12	92.75	3.25				9.25
H. H. Magee, Quispamsis	38	79.5														
Chas. Crothers, Sussex	38	79.5		28	81.25					15	91.5	2.50	19	87.5	1.25	4.00
J. H. Bowser, Sussex Corner	39	79		1	95.75	6.00							17	88.15	2.00	8.00
J. E. Hoyt, Hampton Station	40	79					13	69		32	85					
J. A. Duffy, Nauwigewauk	41	76.5								31	85.25		26	86		
R. S. Parlee, Parleeville				2	95	5.75										5.75
A. J. Marr, Newtown				5	93	5.00				21	89.5	1.00				6.00
Fred Whalen, Sussex				6	92.5	4.75										4.75
W. J. King, Sussex				12	90.5	3.25	1	94.25	6.00							9.25
Wm. Porter, Hammond River				21	88	1.00										1.00
A. S. Murray, Sussex				25	85											
Jeremiah Murphy, Hampton										1	96.5	6.00				6.00
J. F. Roach, Sussex										22	89.25	.75				.75
Robt. McAuley, Sussex 2													1	94.75	6.00	6.00
N. W. Eveleigh, Sussex													6	91.75	4.75	4.75
H. V. Dickson, Hammond River													9	89.75	4.00	4.00
J. W. Patterson, Sussex Corner													12	89.15	3.25	3.25
Byron McLeod, Penobsquis													14	88.75	2.75	2.75
T. A. Reardon, Sussex													15	88.5	2.50	2.50
H. E. Manning, Sussex													22	86.75	.75	.75
Hugh McElroy, Sussex Corner													24	86.25	.25	.25
Jas. H. Jeffries, Sussex													27	85.75		
Creighton Bros., Sussex Corner													29	84.5		
Wm. Buchanan, Sussex													32	83.5		
A. P. Colewell, Bloomfield Station													33	82.5		
...			75.00			75.00			55.50			75.00			75.00	355.50

BUTTER AND OLEOMARGARINE

Hoards' Dairyman has the following:—"We must ever keep before us the difference between oleomargarine and butter. The present price of butter, which is low compared with other food products, is leading many to use oleomargarine instead of butter. Most of these people do not know that butter contains a substance essential to growth, which is not found in oleomargarine. Dr. McCollum of John Hopkins University, has proven, through feeding experiments that vegetable and animal fats as used in oleomargarine do not contain the substance essential for growth and reproduction.

"According to Miss E. L.. Amery of the Wisconsin College of Agriculture, it has been found that in the hospitals of Germany the wounds of soldiers did not heal properly until their ration contained butter. Growing children need butter also if they are to develop properly. If these things be true it is not unreasonable to hold that butter is more nourishing than oleomargarne and contains a substance necessary to promote good health in all classes of people. The New York Health Commissioner says:

"Let us not be deceived by those who are interested in the sale of oleomargarine and lead us to believe it is as nutritious as butter. Facts, show butter contains an ingredient necessary for growth, for healing wounds, and for the health of people and that this ingredient is not found in oleomargarine.

"As butter is never an exclusive article of diet and a milk or vegetables and fruit in the general diet of children and adults contain the substances other than fats which butter has and oleomargarine has not, there is no advantage from the point of calories or of other food ingredients in replacing butter by oleomargarine in table use and cooking for children and adults.

"The Commissioner may be right in stating there is no difference between butter and oleomargarine in caloric value but he is wrong in saying there is no difference in other food ingredients.

"We refer our readers to Dr. McCollum's article in the current volume of Hoard's Dairyman, page 625. It will be noted that the rats receiving milk fat grew to normal size and reproduced themselves but those receiving vegetable and animal fats, from which oleomargarine is made, were scrawney and did not complete their growth or reproduce themselves until given milk fat."

Stable manure supplies fertility in the elements, nitrogen, phosphorous, and potassium. It also supplies organic material which has a physical effect upon the soil.

Can We Blame the Farmer if Production Fails

It will not be long before an appeal will be sent out to the farmers of the Maritime Provinces to increase their farm production during the coming season. Such an appeal is founded on the urgent necessity of the warring nations to be well supplied with food materials of all kinds. The importance of this need has been grasped by the farmer with the result that the total of last years crops has shown that an extra effort and an extra dollar has been spent by him to swell the amount of foodstuffs produced in the Maritime Provinces. How much greater this production can be increased remains to be seen. To some of us it is a matter of raising a sufficiently clamorous hue and cry about Increased Production and the output of farm products will be doubled in one season. To the one who has a true understanding of farming conditions in the eastern provinces the problem is not so easily solved. Such a one sees the difficulties, in farm operations, the farmer is up against and hence is skeptical as to how much the Increased Production campaign as now waged will bring results.

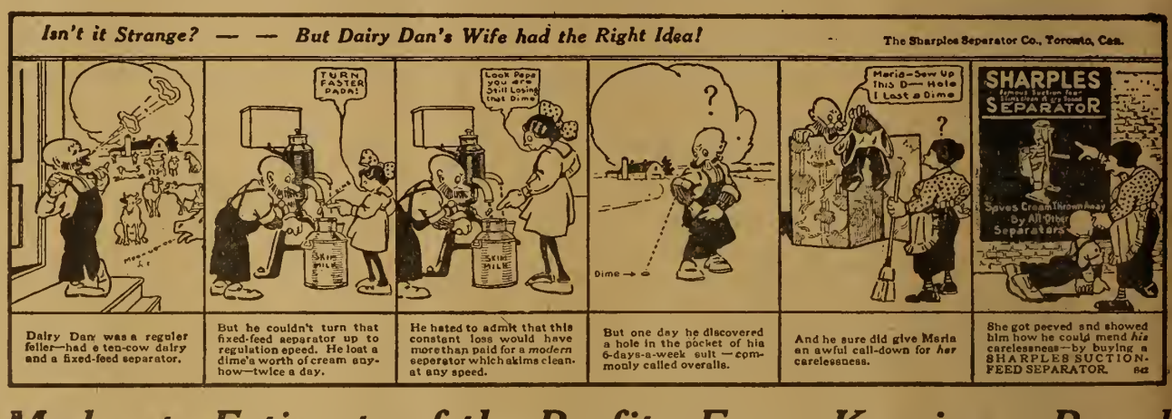
No one will but admit that the farmers, as a class, are just as patriotic and just as anxious for the allies to win in this war as any other class of men in Canada. They will do their share. But in case too great a burden should be placed upon them it would be well to keep in mind the conditions which they have to contend with and which handicap them in increasing the productivity of their farms.

What with the high price of labour; the high price of seed, fertilizer and machinery the Maritime farmer will be up against a bigger proposition this spring than he has ever before had to face. Of course, the one who is ahead of the game is differently situated. He will not hesitate to make an added investment in his farm as he knows the returns will pay good interest on his money. But what about the farmer who just manages to come out even at the end of the year. The annual returns from his years labour and capital are all in and when his bills are all met very little is left in his pocketbook to face the expenses of spring's work. We cannot say that this is an exceptional case. Unfortunately, we have too many of our farms in such positions. At any rate to such a person the opening of seeding time is fraught with difficulties. There is seed to buy—fertilizer to buy—labour to be paid for, and the worn out machinery to be replaced. The call comes to increase the production on his farm. How is he to meet the situation? Either he can buy on credit; borrow money from a friend or bank; or make the best of a bad bargain by putting in half a crop. It is doubtful whether it is sound policy for anyone to recommend the first alternative. The co-operative companies now established in different counties will not give credit. The long time credit given by middlemen of the class of local merchants is an expensive credit to the farmer, since the merchant must of necessity add a large percentage of profit on the buying price. The second alternative of borrowing from a friend is even just as difficult and probably not a sound business proposition. With a great amount of the unproductive capital now invested in Victory Bonds it may be quite difficult to find a loaning friend. In any case a high rate of interest must be paid and when a farmer has to pay over 5% for the capital used in farm operations, the money must be expended to the very best advantage which, without reflecting discredit on some of the more progressive farmers in the provinces, is not generally done. Barring the possibility of getting credit or borrowing from a friend, he must then go to the local bank. What about this alternative? We all know that the banks of this country are not a fit institution for the loaning of money to farmers. They were never intended to be such. Three months is the limit for farmers to use bank moneys, while it takes six to seven months for him to get returns on the money he invests on his farm in the spring time. Moreover, 7% is what he must pay on money borrowed in this way, and according to what we have said previously, this is too high a rate of interest for the farmer to pay for his capital. Hence then, we must eliminate this means whereby the farmer can raise his capital. Are we then going to let him grope in the dark through the situation as best be can, with the result that the much needed farm production is going to be hampered to a considerable extent. In the face of all this then can we not help but realize that there is food for thought, and serious thought for our legislators; for those in charge of the Agricultural work in the province, and for public men who are heralding the cry of Increased Production far and wide. Can they not see that CAPITAL is just as necessary as ENDEAVOUR for the farmer to produce more. Finally, can they not see that the much needed capital is not within the farmrs reach and it will not be unless some special legislation or some special arrangements be made to help him out along this line.

We might ask the question now,—Have the farmers been assisted in getting cheaper and more readily available capital in other countries? Yes. In European countries; in the United States and even in Western Canada, Rural Credit laws have been enacted. The Eastern provinces have yet to realize that before agriculture is to be put on a sound economic basis, and before this happy state of affairs will come to pass, some method must be devised whereby the farmer is assisted in getting cheaper money than he is now using. How this can be brought about is a difficult problem to solve. Owing to our provinces being sparsely populated the Rural Credit laws of Europe would not work to advantage. The United States have adopted, with good results, a modified form of the European plan. The West have worked out a scheme similar to the American Credit system, but it is just questionable whether or not either of these would be applicable to eastern conditions. At any rate the time is present when our legislators should get their heads together to solve the problem. It takes time to formulate a thorough working Rural Credit law. The details connected with it are so varied that it is beyond question to think of having a Rural Credit law in operation this spring. Still could not something be done to improve the conditions the farmer has to meet in a very short while? Could not some assistance be given during the coming season. Could not some arrangements be made with the banks whereby money could be loaned on long term credit based on farm and crop valuation? We will let the question rest here, temporarily, for some one else with the interest of the Maritime Provinces and the interest of the British Empire at heart to continue the discussion on this topic.

A. B. MacDONALD.

Guystion, N. S.


Isn't it Strange? — — But Dairy Dan's Wife had the Right Idea!
The Sharples Separator Co., Toronto, Can.
TURN FASTER PAPA!
Look Papa you are Still Losing that Dime!
Maria—Sew Up this D— Hole I Lost a Dime
SHARPLES SEPARATOR
Saves Cream Thrown Away By All Other Separators
Dime
Dairy Dan was a regular feller—had a ten-cow dairy and a fixed-feed separator.
But he couldn't turn that fixed-feed separator up to regulation speed. He lost a dime's worth of cream anyhow—twice a day.
He hated to admit that this constant loss would have more than paid for a modern seperator which skims clean at any speed.
But one day he discovered a hole in the pocket of his 6-days-a-week suit—commonly called overalls.
And he sure did give Maria an awful call-down for her carelessness.
She got peeved and showed him how he could mend his carelessness—by buying a SHARPLES SUCTION-FEED SEPARATOR.

Moderate Estimate of the Profits From Keeping a Brood Sow This Winter

The man who plans to respond to the strong appeal of Food Controllers Hoover and Hanna to speed up hog production by saving young sows this Fall, wisely considers the business as well as the patriotic side of the venture. Sows are worth high figures and the necessary winter feed is proportionately high. It is not to be wondered if doubts as to financial returns are entertained. With an aim to settle this question we obtained some facts from Professor Trueman, of the N. S. Agricultural College, which we herewith set forth:—

At the College Farm the brood sows are fed on an average of 2 lbs. of mixed meal and 20 lbs. of mangels per day, up to the time of farrowing. The practice is to give them 4 lbs. of meal until they get in condition, and mangels along after that. After harrowing, the sows are fed much heavier. The whole process is set forth in the following table:—

Dec. 1 to April 1—121 days	
2 lbs. of meal per day @ $50.00 per ton (121 days)	6.05
20 lbs. of mangels per day @ 12c per bushel (121 days)	4.84
April 1 to May 11—6 weeks	
8 lbs. of meal per day @ $50.00 per ton (42 days)	8.40
20 lbs. of skim milk per day @ 25c per cwt. (42 days)	2.10
20 lbs. of mangels per day @ 12c per bushel (42 days)	1.00
	$24.07

This may be regarded as an extreme figure, averaging as it does about $4.40 per month. Before the war there were those who claimed to have fed sows at from $1.00 to $1.50 per month, and even lower figures were quoted when skim milk, garbage and other waste material was used. Now for the returns.

An average sow will raise 8 pigs and frequently 10 to 12. Sucking pigs will sell next Spring at $5.00 or more a piece, which means a gross return from the sow of at least $40.00 to be set against a cost of $24.00 for maintenance. The sow herself will be worth as much as when the feeding began. No further figures are necessary to indicate profits to be derived from keeping sows, even with feeds at the present unheard of prices. Possibly some may doubt the market for young pigs next Spring relatives to which we should point out that the "Keep a Pig" movement, like the "Town Garden" movement of last Spring is sure to interest hundreds of suburban dwellers in feeding pigs next year, and this demand added to the normal demand promises a bigger sale for young pigs than the total available supply.

This is the business side of the story. There is no need to dwell on the patriotic, except to briefly state that the "Hog Line" offers the quickest route to making up for the tremendous shortage in meat supplies, which is now one of the most critical features of the war. For further particulars read the advertisement elsewhere inserted jointly by the Dominion and Provincial Department of Agriculture.

NOVA SCOTIA DAIRYMEN MEET

The dairymen of Nova Scotia should note with interest the ad. in a separate column, of the 5th Annual Convention of the Dairymen's Association to be held at Truro. One of the principal features in connection with this will be the results of the Butter Scoring Competition which was held among the creameries during the past season. In this Competition each creamery sent a box of butter to Halifax during each of the five summer months. This butter will all be on exhibition at the Convention, and just previous to the Convention will be scored separately by three judges and the average of the three taken as the official score. A discussion will take place on the quality of the butter to be led by D. J. Cameron, of the Dairy and Cold Storage Division, Ottawa, who will act as one of the judges and also deliver an address before the Convention. Mr. Cameron is one of the ablest butter jurges in the Dominion of Canada and it will be of educational value to everyone interested to have the opportunity of discussing these matters with him.

SCRAP METAL ON THE FARM

Farmers may not realize that they are unpatriotic if they are not selling their worn-out machinery and implements.

Large quantities of iron and steel are needed for guns, shels, bridges and other war purposes. There are many farms on which a good deal of junk is to be found. Higher prices are being paid for scrap metal than formerly, but, in order to save unnecssary expense in getting it to the foundries, neighboring farmers might co-operate and make one hauling do instead of several.

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Montbly Journal devoted to the interests of tbe farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

Subscription price $1.00 per year. This paper is sent to subscribers unless a definate order for discontinuance is given.

The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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DECEMBER 18th, 1917

DATES OF ISSUE.

January	22
February	5-19
March	5-19
April	9-23
May	7-28
June	11-25

GRADE UP THE DAIRY HERD

Malcolm H. Gardner, Superintendent of American Advanced Registry, makes the surprising statement that there are 5,000,000 unprofitable cows in the United States. This is one-fourth of all the cows in the country. He figures that if it were possible to cut out and save the care and feeding expenses of these unprofitable cows, the saving would amount to at least $100,000,000 a year. This is a vast sum to be wasted, for it has been proven that it is possible to pick out the boarder cows. The man who keeps animals of this character in his herd is doing so either because he wishes to or because he is not sufficiently interested to take the trouble to cull them out.

It would not be possible to eliminate all the unprofitable cows at one stroke, as there are not enough good ones to take their places, although it might in many cases be better for the farmer not to keep cows, rather than keep the ones htat lose him money. The process of elimination must of necessity be gradual, a weeding out and a grading up. By the use of better sires and the selection and use of the cows and heifers that produce sufficient to more than pay for their feed and keep an increase in the yearly income from the dairy herd will become evident. Such a process of breeding and selection should go on in every herd. If more attention were given to this subject by cow owners, there would be more profit in daeirying.

The work carried out in the Maritime Provinces by Messrs. Harvey Mitchell, H. N. Flewelling, Harry Brown and others, under the auspices of The Canadian Cow Testing Association, is bringing results. Through their efforts many of our dairymen are becoming more and more interested in the upbuilding of their herds and the increasing of their average production.

The slackers must go. We know of no new New Year resolution that would mean more dollars and cents to our dairymen than the elimination of the boarder cow as per the verdict placed upon her by the Cow Testing Association.

TO SAVE NEW BRUNSWICK FORESTS BY NEW FOREST SERVICE

The chief power behind the circulating dollar in New Brunswick is the productive forest. To reduce the umber cut automatically reduces the amount of money that is available for everyday business. It also means the reduction of provincial revenues, and the amount thus forfeited, would have to be raised by other kinds of public taxes. Employment likewise would take a permanent slump from which nothing could revive it.

In order to keep New Brunswick's forests contributing their utmost in money and employment, n thriving towns and busy industries, a movement is under way to have the Provincial Government reorganize the system of fire protection on all the timber lands. Fire has robbed New Brunswick of vast quantities of timber, from which no citizen derived a penny of benefit nor a day's employment. The plan proposed by the Chief Forester and strongly supported by public bodies such as the Commission of Conservation and the Canadian Forestry Association, is to establish a system of fire districts, each in charge of a competent forester. Instead of locally-controlled fire wardens, as at present, there would be a centrally-controlled body of skilled men, under constant supervision of discipline. Such a system of fire rangers has been proved as the only workable and economical plan for Quebec, British Columbia and Ontario.

The rangers would perform their duties according to schedule, giving close account of their time, distances covered, fires encountered, fire damage, etc. They would be assisted by observation towers, telephone lines and other necessary aids in controlling outbreaks of fire. To encourage the best rangers to remain with the Forest Service from year to year, the Chief Forester plans to utilize them for supervision of the cutting in fall and winter. This involves a new departure for New Brunswick. It means that the Government would have much more thorough oversight of the quantities of logs cut on licensed lands and could make some provision for the more careful treatment of the forest by jobbers.

A feature of the plan of Forest Service reorganization, now being considered by the Government is that with very little more than the present expenditure, New Brunswick can have a well-organized Forest Service second to none in Canada.

THE MEAT SHORTAGE

Word comes from Europe to the Department of Agriculture that the fat shortage among the allied nations is becoming acute. The situation in France is very critical—each month sees a still further depletion in the already limited supply. Mr. Hanna, Food Controller of Canada, says the speediest way to relieve the fat shortage is to greatly increase the production of hogs.

This is sound logical advice. Swine are prolific and grow to marketable size more quickly than any other kind of livestock. One brood sow will produce from 1500 to 2000 pounds of dressed pork in one year. Hence one is justified in making the statement that we must look to the brood sow to solve the meat and fat shortage.

New Brunswick, always a big importer of feeds, has harvested a very small crop of grain this year. Weather conditions were unfavorable —hence the feed shortage is worse than ever. Thus it may seem unadvisable to advocate the keeping of more brood sows under existing circumstances. However the present scarcity of fats warrants us in making every effort to increase pork production in New Brunswick. Numbers of people could partly winter a sow on the garbage and kitchen refuse from the house. It is to those farmers and people who are not wintering a sow and to those farmers and people who could carry an extra sow that this appeal is directed. The monetary return, aside from the patriotic issue involved, may be large or small according to how much feed has to be purchased. With pork ruling at 25 cents a pound it would seem that money invested in a brood sow should prove a fairly attractive proposition.

Regarding the feed shortage and importation of feed—no feed can be exported from Canada until Canadian buyers have had a chance to bid on it, e. g. the New Brunswick Department of Agriculture was given an option on a certain number of cars of feed at a fixed price. As many car loads as possible were placed by the Department and on December 8th the option went out of effect. Other options on other lots of feed will undoubtedly be offered to us. The Department takes orders in straight car lots. Few farmers would require a whole car load but a group of farmers could unite and handle a car load.

The seriousness of the meat shortage has been placed before you, likewise a means of meeting the feed scarcity. Action is necessary. Winter a brood sow.

INTERESTING THE YOUNG PEOPLE

How rapidly educational work of an agricultural nature is spreading among our young people. It is vastly different to be a boy or girl on the farm to-day than it was ten or fifteen years ago. In those days there were no boys' and girls' clubs, no school fairs, no banks sufficiently interested in farming to loan any money to a boy or girl to buy a pig or a calf. None of these things were thought of.

But to-day it is a real joy to live in a farming district where the boys and girls have a place in community life. It is quite proper nowadays for boys and girls to own a pig, calf or colt. Such ownership is doubly prized and doubly interesting. Apart altogether from the satisfaction of owning something of their very own, young people are constantly enthused in anticipation of the day when their possessions are to be pitted in competition with othr boys and girls at the school fair. Here the highest principles of friendly competition are installed into the young mind, and he or she is inspired to accomplish the best possible when standards are set by this method.

And what may we expect from this awakening of educationists to a reaization of the possibilities for agricultural betterment through our young people? We may confidently hope for a more enlightened and more contented future generation on the farm. We may also hope that the interest of the coming generation will be keenly directed toward the production of better poultry, better live stock, better grain, and in better farming generally. The impressions made on the young mind are much more indelible than those inprinted on the old. If the above is accomplished in any measure, the work undertaken will be well worth while. We have been altogether too long in awakening to the fruitful field for education offered by the boys and girls. Now that it is begun let it go on with the fullest measure of support from all.

* * *

The term nervous temperament s used to refer to the ability of the cow to use a great amount of food without wasted energy. It is this nervous temperament that enables good cows to convert every available ounce of food into energy, or milk and butterfat, while other cows would waste energy because conditions under which they are housed, cared for or milked are not absolutely ideal and suited to their individual tastes.

HORTICULTURE

THE RELATION OF FOOD TO THE WINTERING OF BEES

In warmer climatesnot blessed with as severe, cold winters, where bees can enjoy frequent flights, it matters very little what the food is as long as it is there in abundance. Even honey dew that would cause dysentery before spring, in northern bee colonies, will answer as food. In these milder climates little or no protection is needed, but in higher latitudes chaff packed hives or warm, well ventilated cellars are necessary and there must be some care exercised in regard to food. It has been asserted by some writers that "honey is the natural food of bees anl nothing is gained by substituting something else." It must be remembered that the "natural home" of the bee is that of a warm climate, where there are no long spells of confinement caused by continued cold.

Honey, of course, is the "natural" food, but this does not prevent their dying osmetimes as a result of its consumption, when a diet of cane sugar would have saved their lives. In my opinion, food is the pivotal point upon which turns the wintering of bees in our nothern states.

"Food is the fulsrum and temperature the long end of the lever"' said one of the foremost of bee writers, and I believe he was right. The whole question in a nut shell is just this: The loss of bees in winter, aside from that caused by bee dysentery, is not worth mentioning. It is this that causes the most of our bee losses in Maine, whether in the cellar or out-of-doors, and we should well investigate the cause. An overloading of the intestines, with no opportunity of emptying them; cold confines the bees to the hive; the greater the cold, the larger are quantities of food consumed to keep up the animal heat; the more food there is consumed, the sooner are the intestines overloaded.

A monment's reflection will convince one that the character of the food consumed ha an effect upon the accumulation in the intestines. In the digestion of cane sugar, there is said to be very little residue or waste foreign matter. Honey is usually quite free from nitrogenous matter, being well supplied with oxygen, and a very good and safe winter food if gathered early and properly ripened, although not as good as properly prepared sugar syrup made from good granulated sugar, free from any admixture or aduteration. There has been sold a granulated sugar having a bluish tinge, which has not been found a safe food for bees in confinement, but we have always found the granulated sugar from the Forest City sugar refinery a safe winter food. Honey often contains floating grains of polen which is not good for bees in winter. · Sugar syrup never contains nitrogen, but more oxygen or heat producing producing matter, which is just what is needed in our cold climate.

The excreta from diarrhetic bees has been found ao be composed almost wholly of pollen grains in a digested or partly digested state, with slight traces of organic matter. What overloads the intestines of bees and is the greatest contributing cause of bee diarrhoea or dysentery is this organis matter combined with the larger amount of the nitrogenous matter, either as grains of pollen flotanig in honey, or by their eating the bee bread itself. Repeated experiments have proved beyond a doubt that as a winter food for bees cane sugar has no superior.

With this as an exclusive diet, bees never die with dysentery, and if kept in quiet and darkness and in a temperature ranging from 40 to 45 degrees, other things being quite right, they are all but certain to winter successfully. The temperature can only be perfectly controlled of course in a dry, frost-proof cellar, although we have wintered well in a rather damp one. Other things being quite right, what are these other things that I have mentioned::

First, a strong colony of young bees, bees hatched in August and September; bees that are allowed to become queenless at swarming time and kept so from neglect to provide a queen until late in the season, go into winter quarters with old bees nearly ready to slip their mortal coil and do so long before spring; their vitality to stand the winter's cold is very little, and the quality or quantity of the food cuts a very small figure in this matter, whether good or poor.

Second, bees bred from vigorous stock. Will our wise and progressive dairymen breed from an animal small, undersized, with a noticeable lack of vigor? Not if they know it. They select vigor as one of the first requisites. So should we, especially in Maine. Breed from those queens that produce colonies that winter best, and secondly, those that produce the most honey; for production amouns to nothing if we cannot succeed in wintering the colony. We cannot afford to buy new colonies every spring. This being the case, the question naturally follows, why not take away the honey in the fall and feed the bees sugar in the place of it? But the objections are these: Every pound of sugar fed puts a pound of honey on the market, but this ought not to weigh so heavily against the almost certainty of wintering the bees safely. Neither need there be any labor of extracting the honey in the fall if comb honey is raised mainly and supers given as soon as clover opens and the bees are induced to enter them, for most of the clover crop will be tsored there and afterwards the colony can be given a super of drawn comb, until the fall crop is over with, they then can be extracted and sugar syrup fed in its place. I have not space at this time to speak of the way it should be done, but will do this later, but I will say that a reckless ertracting of broad frames in late fall by the inexperienced has often been the cause of losses and heavy losses. Replacing honey stores with sugar syrup stores must be done properly to be a success.

The present price of sugar is prohibitive, but the price of honey is rapidly rising and there is no doubt in my mind that the business of producing honey is going to be a good one from now on. The price of sugar will seek a level with other commodities in time, and then we may feed it to our bees for winter stores, and extract and sell our honey at a profit and winter our bees safely on sugar. We have in the past wintered from 50 to 100 or more colonies with practically no loss, and it can be done by anyone who cares to take the trouble to learn the proper way to do it. Extracted honey is being shipped to Europe in large quantities for the use of the soldiers, as its virtues for their use are becoming known, and there will be a greater demand for it. I predict, after this war is over.

Extracted honey is easiest to raise both for the bees and their owners, and the easiest and most sensible way to present it to the public, and I hope to live to see the day that it will be in the greatest demand; and if there are fussy people that must have indigestible wax to eat with honey, perhaps we may conclude to present them with a sheet of it along with every bottle of extracted honey sold, to nibble along with the honey. It would be as well for them and better for us, the producers. What do other beekeepers think?

I never see a handsome case of ocmb honey (and I admit that looks well) without thinking of how much extra work has been done by the bees and their owner to get it in that form. Only extracted honey can be shipped and the price will be high. At the present price of sugar, it does not pay to replace honey with sugar for market purposes, but for wintering we have found it the safest food.—E.N.S.

PLOWING THE GARDEN

Early plowing is necessary for an early garden. Land plowed in the fall will dry quicker and be ready to plant sooner than spring-plowed land. The fall-plowed garden should be left in the furrow slice unworked, because this rough surface will catch the winter rain and let the water soak into the subsoil below; more soil moisture is stored; more of the surface soil finds its way into the openings in the subsoil, thus loosening and ameliorating the latter. The higher masses of surface soil granulate under the influence of alternate freezing and thawing and sun and rain. If a garden is forked or spaded no attempt sould be made to level it.

If subsoiling is desirable it should be done in the fall. Usually at this season the subsoil is yet wet, and therefore will not be puddled by handling. Winter freezing mellows and disintgrates the subsoil. Leaves or similar loosening material to be worked into the soil are more plentiful in autnmn. This fall working also gives the soil time to settle before spring planting. Soil worked deep in the psirn, leaving an opening below, may dry out badly, especially if much coarse organic matter is worked in shortly before planting.

During the first sunny days of early spring the rough surface of fall-turned land dries and flocculates. It is in condition to work down and be planted early. On the other hand, land which lies unturned, smooth and fiat udring a wet winter has no dry flocculent surface, and remains too wet to handle until late.—[Dr. J. C. Whitten, Misouri.

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GARDEN AND ORCHARD

A Winter Garden iin the Cellar

If you have a warm cellar you can grow fresh vegetables all winter. It is particularly easy to grow rhubarb in the cellar and to provide enough for pies at a season when they will be greatly appreciated. Asparagus is forced almost as easily, while dandelions endive and horse radish may be grown without much trouble.

Perhaps it is tbest to experiment with rhubarb if one feels a little doubtful about the success of a cellar garden. Rhubarb roots are plentiful and cheap, but it is as well to use only those which are at least three years old. Usually they can be obtained in the home garden or in the garden of a neighbor, but if not, a seedsman or nurseryman will provide several clumps at small expense.

Freeze Rhubarb Roots

When the roots come from the garden they must be dug before the ground freezes, although they are not to be forced until they have been well frozen. It is difficult to dig them after the ground has become frozen, of course, but they should be left on top of the ground until the frost has pentrate them. Then they will keep safely until the time to start them into growth arrives. As a rule, they do not force well until after January 1st.

The plants may be set on the cellar bottom or in boxes and commonly are simply covered with two inches of sand, the latter being kept moist at all times. Quicker results are secured if a layer of fresh horse manure is placed under the clumps and covered with two or three inches of loam, so that the roots will not be burned. A foot apart is the right distance to set the clumps.

Rhubarb forced in this way is best grown in the dark for which reason it is well to hang a curtain over the window or across a corner of the cellar, or to partition off one end. Of course, only a little room is needed. Two or three months will be repuired to produce a crop and the stalks will be almost white, with but little leaf growth, and of delicious flavor.

Don't Allow the Roots to Freeze

Similar methods are to be followed when asparagus is forced in the cellar, except that the roots must not be allowed to freeze. They may be kept in a cool place, however, and a few forced at a time. Plants from the garden or the fields of professional growers may be used if they are not at least three years old. Scedsmen sell plants designed especially for forcing.

The roots are to be grown in the dark, like those of rhubarb, and should be set close together, but not crowded, with ordinary soil worked around them so that all the spaces are fille. Asparagus comes along rather quickly, and often may be eaten in six or seven weeks from the time forcing begins.

For all vegetables grown in the dark a temperature of from 50 to 65 degrees will be about right. In many furnace heated cellars there will be difficulty about the temperature, but sometimes it may be necessary to provide a little extra heat, which is easily accomplished by hanging one or two lighted lanterns in the cellar, but first the glass must be painted black, so that no lght wll be emtted.

There are other vegetables which may be grown in the kitchen in full sunlight during the winter months. A little bunch of parsley potted and given a sunny window will furnish flavor for many a savory dish. Sage may also be grown in pots. Cress is easily grown in a box set in the window and a few seeds will give plants large enough to use in a few days. Chives may be forced in the same way sa that there may be no lack of fresh green stuff, even when the ground outside is piled high with snow.—[E. I. Farrington.]

GARDEN REDUCES LIVING EXPENSES

The garden is the quickest and best means of reducing the cost of living. Present food prices can best be reduced by growing a new supply of food. It will take several months to produce a surplus of many food products such as meat, potatces and flour. Furthermore, the effect of this surplus on the price which the consumer has to pay is doubtful. By planting a garden the consumer can relieve the food shortage directly in a few weeks. He can substitute his fresh garden vegetables for canned products and for many of the high priced staples.

The earliest garden crops are those which thrive in cool weather and which are more or less frost resistant. The first crops which may be planted are onions, peas, salsify, spinach, and parsnips. Ordinarily these may be planted in April or early May. Later, lettuce, radishes, beans, corn, etc., may be planted. Succession plantings of lettuce and radishes should be made because both have a short harvesting period. Another group of cool weather crops includes beets, carrots, cauliflower and cabbage.

CARE OF ROOTS IN STORAGE

(Experimental Farms Note)

A great many ton of mangels, turnips and carrots are lost annually by neglect after being placed in storage. Everything may be done to insure a full crop and to harvest it at the proper time in good condition, yet, if not properly looked after during the winter months, a high percentage of this crop may become a total loss. Such

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loss con be prevented only by prompt attenton to the details of storage requirements

If a cellar is to be used for storage it should be thoroughly cleaned, the ventilators put into good working order, and thorough drainage and portection from frost assured some time before it is filled. Usually in filling cellars it is customary to dump the roots down through a trap door in the floor above, or roll them in over a shoot from windows at the ground level. No matter how much care is exercised in the performance of either of these operations, there is bound to be accumulations of broken and bruised roots and earth at the end of the shoots, or beneath the trap doors. Unless frozen, the broken and badly bruised roots, in such a mixture, will invariably rot and by so doing enerate heat that will help to spread the infection to the surrounding sound roots. It s therefore obvious that accumulations of this nature should be thoroughly cleaned out as soon as possible after the harvest has been completed, and the damaged roots fed before they have had a chance to decay.

Frequently, during the winter months, rotting will start among apparently soound roots, usually as the result of an unsound root becoming buried among the others. Infection spreads rapidly among roots in storage, and all such infected areas should be thoroughly cleaned out whenever detected

All classes of roots lose a certain amount of moisture soon after harvest by evaporation or, as is commonly called, sweating. If an adequate ciculation of air among the roots has not been provided for, this moisture will condense and wet places will be formed which will favour this growth of moulds, and other plant life, which may directly, or indirectly, cause rotting. It is, therefore, imperative that during the first few weeks of storage, and in fact whenever the outside weather permits, thorough ventilation be maintained.

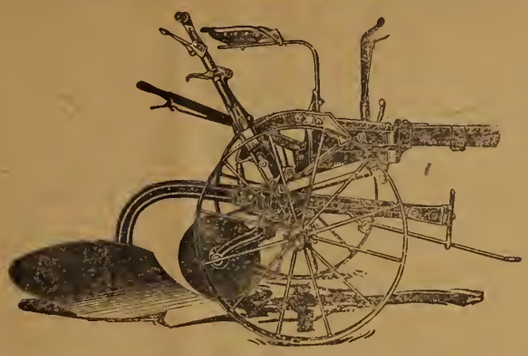
The temperature in the cellar should be such that the roots will neith ergrow to any appreciable extent, nor yet freeze From freezing to 40 degrees F. may be considered as the extreme range. It is an excellent plan to hang a thermometer in a convenient place in the cellar and consult it daily. If the temperature is above 38 degrees F. the ventilators should be opened and, when it drops sufficiently, closed. When the warmer weather of spring and early summer has set in it is advisable to keep the ventilators closed during the day and open during the night, so as to admit only cool air, thus keeping the cellar cool as long os possible.

If the roots are to be pitted outside it is essential that thorough drainage is assured, either by choosing a location on sloping or sandy land, or by providing artificial drainage.

After the roots have been piled and the ventilators inserted, the pile should be covered only with straw to a depth of about eight inches. Later in the season, when cooler weather has set in, about 4 inches of earth should be placed over the straw. Still later, when this earth has become frozen to a depth of about two inches, another covering of straw and earth should be made. When cold weather has finally set in the ventilators should be plugged with straw.

If the pit has been properly constructed and covered correctly there is littledanger of the roots rotting. As a precaution, however, it is advisable to hang a thermometer in every second ventilator and to consult it occasionally. If the temperature in the pit gets higher than 45 degrees F. it is evident that heating is taking place and the pit should be opened up and the infected area thoroughly cleaned out.

In the spring the layers of covering should be gradually removed, the ventilators opened and, generally speaking, the portection modified to suit the rising temperature.



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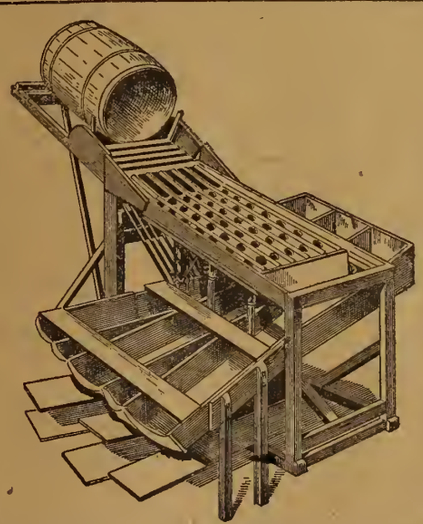

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Maritime Provinces—Thomas Harding. Welsford N. B.

Quebec—Neil Sangster, Ormstown, Que.; P. J. Salley. Lachine. Rapids, Que

Manitoba—Homer Smith. Winnipeg. Man

Saskatchewan—Harry Follett. Duval. Sask.

Alberta—E. W. Bjorkeland, Red Deer, Alta.

British Columbia—Dr. S. F. Tolmie, Victoria. B. C.

W. A. Clemons.
Secretary.

WHY BE A DAIRYMAN ?

Dairy farming is a growing business. There is a wide-spread tendency for large beef ranches and grain farms to be sub-divided into smaller and more intensive dairy farms. Why is this the case and what are the reasons which draw men into dairying?

In any business the owner must look to the profits. In the dairy farming business the profits may come from four sources. The fiirst and least evident of these profits are those due to the increased soil fertility but it counts as much or more than any other. Many fields have been cleared and then cropped continuously until the diminishing returns per acre have sounded the warning. One farmer had a thirty-five acre field which had been "farmed to death" producing less than twenty bushels of corn per acre in a good season. Hauling out manure and rotating with clover built up the fertility until some years later. he obtained sixty to eighty-five bushels per acre. according to the season and in some parts of the field the yield went as high as ninety bushels. To estimate the money value of the fertility phase of dairying. the farmer should very largely credit the dairy herd with the increase in the crops per acre.

A second and more tangible source of profits is in the sale of the dairy products. Selling cream and feeding the skim milk to young stock and poultry is probably the most profitable combination in dairying, unless a particularly good market for milk is available. Many practical and scientific experiments have proven that calves and pigs will thrive on warm, sweet, undiluted skim milk. nearly as well as an whole milk. especially when the skim milk is supplemented by a small quantity of grain. For feeding pigs. 100 pounds of skim milk is worth about as mush as one-half the market price of a bushel of corn. One dairy farmer's cream checks for a year totalled $1900.15 and deducting the cost of feed. which was $950.00, left an income of $950.15 without adding the feeding value of the skim milk to calves and pigs.

The breeding and maturing of good dairy cows is the third source of profit. Good cows are valuable, not only to fill vacancies in the home herd but they also find a ready sale to other dairymen. Very often. they can be sold at private sale as foudation stock for some new herd.

The sale of a cash crop from the dairy farm makes a fourth source of profit possible, without the usual decrease in soil fertility. since the manure. rich in plant food. from the dairy herd balances the sale of the fertility constituents of the crop.

Another advantage which attracts men to dairying is the utilization of non-tillable land as pasture ; kaste land which may afford good pasture to dairy cows, but which cannot be tilled and made to render a crop income. Land in pasture is not subject to "washing out" as much as plowed land.

The conversion of bulky crops such as hay. grain and roots into the more easily marketed products such as milk, cream. cheese and butter. effects a great saving in the transportation and handling of such crops. Constant employment of farm labor. producing crops in the spring and summer and feeding these crops in the fall and winter. makes it possible to hold steady help throughout the year. Unifform and regular returns coming periodically to the dairyman gives him cash for ready capital to meet his family and labor needs. The dairyman is able to pay as he goes and to take advantage of cash prices due to this "cash on hand."

Good profits. building up the soil. less transportation. year around employment of labor, and the cash weekly or monthly returns are some of the advantages which make dairymen from beef or grain farmers.—R. A. Lamson. Purdue University.

SEX CONTROL

On Oct. 24. Dr. C. D. Woods of the Maine Agricultural Experiment Station issued the following bulletin:

No Known Way to Control the Sex Ratio in Cattle

Any method of breeding which would tend to increase the proportionate number of heifer calves is of the utmost importance. There seems to be a pretty general feeling among brooders that the proportion of heifer calves may be influenced by regarding the time in the heat period at which the cow is served. There is difference of opinion. however. as to how such control is to be gained. On inquiring among about 200 of the best breeders in the state, it was found that 42% breed early in heat. and 27% breed late in heat. A few data gathered by the Maine Agricultural Experiment Station 25 years ago indicated that there was a possibility of influencing the sex ratio by paying attention to the time of service. The subject aws believed to be of such supreme importance as to justify the careful study of the matter on the basis of extended statistics.

Summarized results of 1313 separate and distinct matings show that there is no practical relation between the time in the heat period which the cow is served and the sex of the offspring. In each one of the cases the facts were accurately known and reported in such a way that any bias conscious or unconscious. of the observer could not have influenced the result. Out of the more than 1300 matings. about 50% of the calves were males, whether their mothers were served early in the heat period. at the middle of the heat period. or late in the heat period. The results of these studies make it evident that there is no significant preponderance of the females when service is early in heat. The apparent relation between thse two factors, which is believed by many breeders to exist. and which earlier statistics at the Maine Agricultural Station appeared to indicate. seems now to be purely accidental, and to have arisen only because of the comparative meagreness of the statistics on which the matter was discussed. There is no known method by which the sex ratio or proportion of sexes in cattle may be effectively controlled by the breeder.

To this bulletin. S. S. Perkins of Durham takes exceptions, as evidenced by the following letter sent to the Lewiston Journal:

In regard to the controlling of sex in breeding cattle. I will say that I think I hve overcome the obstacle. We have been trying for the last four years a plan that has given us heifer calves at will. and bull calves from such cows as we thought best, at our will.

When 1 read Dr. Woods' report of the plan he had mapped out for the 256 farmers of the state to report on. and not a single one had a favorable report to make. I could not help saying Eureka! For the plan we have been following has not failed us in a single instance, and we have the

No Matter

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Proprietors, Dr. Cassell's Co., Ltd., Manchester, Eng.

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AYRSHIRE CATTLE

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OF

DAIRYMEN'S ASSOCIATION OF NOVA SCOTIA

AT THE

Agricultural College, Truro, N. S.

Thursday and Friday, January 10th and 11th, 1917

All Cheese Factories and Creameries in the Province are requested to send at least two delegates.

For full particulars write

W. A. MacKAY, Sec., N.S.A.C.

TRURO, N. S.

heifer calves to show or it.

Our plan is one that we thought was right, and that is in regard to sex of the ovary. We think that the ovary must be a male or a female one at the beginning, and it can't alter the sex, no difference what time of service.

So we keep a record of the sex of the last calf a cow has, and the next heat of the cow will be the opposite sex of the last one. So by keeping a strict record of heats, we are able to control the sex of the calf. That the ovaries are either male or female, so we are sure if we serve on a male heat we shall get a male calf; and if a female heat a female calf.

Our experience has been such that we are sure of the right results. Hope this may bring out some argument on the subject.

FEEDING THE CALF

The average man makes a mighty poor "wet nurse" for a calf. Too often he seems to think that the calf should be as hungry as possible at feeding time so that it will take a hearty meal. For that reason he lets it have but two big drinks of milk, inght and morning.

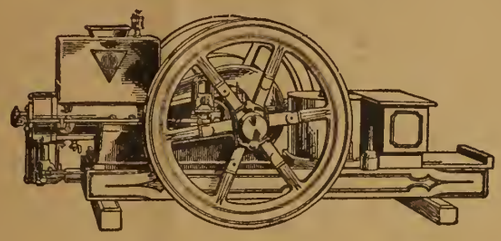
That is a wrong and unnatural way of feeding a young calf. Watch nature's plan. The youngster takes a suck or two o fmilk at frequent intervals, changing teats now and then and often kneading the udder with its head. Note that it sucks the milk instead of drinking it, and sucking is a comparatively slow process. On the contrary, when the calf is fed by hand the man who arrives with the pail of milk is usually in a big hurry, and so makes the calf hurry up the drinking process as much as possible; then he wonders why the calf suffrs from indigestion, or at least fails to thrive.

What a difference there is in the appearance of the hand-fed calf, raised on the plan we have outlined, and the suckling calf at six weeks of age! Thedifference surely is an argument in favor of the natural plan of feeding. The natural plan gives the better results for the reason that the milk is sucked in small quantities, so slowly that it mixes at every swallow with the saliva poured into the mouth during the operation. The saliva renders the milk alkaline and properly prepares it for the fourth stomach which contains the ferment (rennin, of rennte) that curdles the milk. When a calf drinks fast the milk is swallowed without the addition of the necessary amount of saliva and entering the fourth stomach, is quickly coagulated into a tough curd which cannot be easly digested by the calf, is the natural cnsequence. The calf may scour acutely and die, or suffer from less acute chronic scouring and fail to thrive. Or it may suffer from a sudden acute attack of indigestion characterized by a fatal fit or convulsion; or it may show no severe symptoms, but fail to grow and look as weel as it shoudl do or would do if properly fed.

The lesson from all this is that it would be better, if possible, to have a woman do the calf feeding. If that cannot be managed, then have it done by a mature, careful person, as young children do not understand the importance of careful feeding. Then try to feed milk at least three times a day, instead of twice, and from a self-feeder, which will make sucking unnecessary. If that cannot be done, then make the calf drink slowly and keep it stanchiond for some time after feeding. This alone will prevent a great many cases of severe indigestion, and most of the chronic indigestion so common among hand fed calves.

Next remember that the fourth stomach, or true digestive stomach (abomasum), is the only one ready in the young calf to digest or care for food. The first stomach (paunch or ruinen) is undeveloped at first and cannot care for roughage. It therefore is a serious mistake to make the calf eat coarse fodders too early, in place of feeding sufficient milk and easily digested meals which go almost directly into the fourth stomach. The calf fed on roughage becomes potbellied and stunted, and the growth which should be made during calfhood if not made then, cannot be attained later. The proper feeding and developing of the young heifer calf really is more important work than the feeding of the adult dairy cow.

ALPHA



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An Alpha will saw more wood in a day than you can saw by hand in a week.

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WAS IT THE COW'S FAULT?

Supposing that you keep a cow giving five thousand pounds of milk in a year, for which you receive $70 cash, how much profit does that cow make? This is not a riddle, but simply a query that every dairyman should be in a position to answer. Leaving aside the "higher accounting" side of revenue and expenses per cow — those persistent items of rent, interest, taxes, depreciation, etc.—and taking only income from milk or fat, and cost of feed, are you then in a position to say definitely that each cow you keep does make a good clear profit above fee cost?

Whether the feed is valued at $40 or $80, whether the income is $50 or $120, is there such profit that a fair return is made to you for the labor expended? For if revenue and expense just balance, showing no margin of ppofit at all, there must surely be something wrong, your labor has to be paid for.

PULVERIZED LIMESTONE

SWEETENS THE LAND AND PRODUCES HEAVY CROPS

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LIVE STOCK.

THE CARE OF EWES IN WINTER

(By Professor THOMAS SHAW.)

When caring for ewes in winter on the arable farm, much depends on the weather conditions that prevail in the locality. In some areas where the snowfall is light and the ground is bare much of the season, the flock will gather a large part of its food in the fields, if allowed to do so, and suc liberty should certainly be given to it, not only as a matter of economy with reference to food, but as a matter of healthfulness for the sheep, and more especially for the healthfulness of the lambs when born. There is probably no one influence which tends so much to the production of weak lambs as lack of exercise in the dams. When ewes are confined to padlocks for long periods in Winter, as they sometimes are, where the snowfall is deep, it is almost a foregone conclusion that there will be trouble with the lambs at the lambing season. They will probably be over-large, but lacking in vitality. When goitre is present, it will be in an unusually aggravated form, so much so that some of the lambs may die at birth from the large swellings that appear in the throat.

In areas of deep snowfall, one of the most difficult problems of the stockmen is to secure ample exercise for the ewes. To encourage them to take such exercise the owners sometimes open up a track with a snowplow to some distant feeding ground, in which food is fed and to which they have access daily save in time of severe storms. The Northwest is but little subject to such snows, save on the mountains, hence the encouragement of artificial exercise is not a problem with them. Shepherds, notwithstanding, should allow the sheep to roam over the fields even when they may not be able to get much food. They will be greatly benefited by the exercise.

Another matter of great importance is to see to it that they are not confined in sheds over night where the ventilation is deficient. Such treatment is deplorably bad. They breathe impure air. They become overheated. When liberated in the morning, they go out betimes into a cold atmosphere. The sudden change produces colds and catarrhal troubles accompanied by more or less severe coughing, all of which is more or less harmful to the flock. To give them the liberty of a shed is far preferable, even though it be open in front and allowing them, if they care to do so, to lie out in the open in a well-bedded and dry yard. Oftentimes they will choose the yard in preference to the shed in which to sleep and they are certainly the best judges of where they can secur ethe greatest comfort while resting. The great consideration in providing suitable Winter quarters for sheep are to have them protected from winds and air currents in the form of draughts, to have them dry, that is, free from moisture influences coming from below, and to ave them so that they can obtain adequate shrelter in providing against severe st orms.

With reference to food, much will depend on the time when the lambs are to come. If they are not to come until the sheep go out on Spring pastures, the flock may do fairly well on some good kind of nitrogenous hay, or alfalfa, clover, or vetch, even in the entire absence of a grain ration. Such Wintering is not costly and it woul dseem to answer quite well for ewes that are to produce their lambs on the ranges after the opening of the season for grazing. It is quite different, however, with ewes that are to produce lambs before the season of grazing. Such ewes ought to be well maintained. They should be in fairly good condition before the lambs are born in orede to nourish them properly when they come. To insure this will usually call for the feeding of some grain, if the lambs are to be properly nourished; usually, however, not more than one pound per day will be required. Almost any kind of mixture will answer, but it is well when oats or wheat bran or both form a considerable proportion of the same, and a sprinkling of oilmeal will help much. If some field roots can b efed, so much the better but before the lambing season they should not be fed in excessive quantities.

After lambs have been produced, say in the early Spring months, the ewes should be liberally fed. After the lambs have reached the age of say two or three days, they will take care of themselves. They can then stand a considerable degree of exposure and apparently without harm. As lambs that come this early are to be sold as milk lambs or at least somewhat early in the season, the ewes must be well fed. In addition to nitrogenous hay, they shrould get a liberal supply of grain. If they can have an ample supply of roots, almost any kind of the same, it will tend greatly to stimulate the milking properties of the ewes. Corn ensilage will prove a good substitute ofr roots, but it is not the equal of roots in sustaining the animals in good health. Ewes thus fed should push their lambs forward rapidly for the early market. It should also be mentioned that the fodders fed to breeding ewes are much superior when nitrogenous in character and of fine growth. Overripe timothy or over-ripe prairie grass are ill-adapted to the needs of breeding ewes in Winter.

PROFIT ON A SMALL FLOCK OF EWES

In October, 1916, a flock of 100 grade ewes were purchased at public auction from the C. P. R. Department of Natural Resources at Coaldale, Alberta. 50 Shropshire shearling ewes at $11.75 apiece and 50 Merino three-year-olds at $9.50 apiece and a pure bred Shropshire ram at $42.50 also 6 old ewes at $6.00 apiece. To this really should be added the price of a second ram as the service of one was obtained from a neighbor who was planning to lamb around six weeks or so later than were we.

Cost of Wintering

A record of the cost of wintering was not attempted as they were pastured on the stubble fields and hay meadows most of the winter The feed that was given them during the severer part of the winter was damaged hay and odds and ends of roughage that had little or no market value. The onlly class of feed given that would not be apt to be found on the ordinary farm was turnips. As we happened to have a surplus of these they were given a feed of sliced turnips daily for most of te winter. At lambing time a little grain was fed, also some hay of good quality. They were fed grain (barley and oats mixed) from time of lambing until turned out on grass. Eac one probably received about one pound of grain and two pounds of hay daily at this time.

Dogs

Te danger from dogs is very real when sheep are kept under farm conditions and usually the closer one is located to a town te greater becomes the menace. Stringent laws arranging for the destruction of dogs which are ont kep under he owners' close supervision are most commendable. The Lethbridge Station is only about three miles from the city of Lethbridge and consequently there are more stray dogs wandering about than might be the case in a farming community more remote from a large town.

One night in February the corral in which the ewes were confined at night was visited by two stray dogs. Their presence was not discovered until nearly daylight, and they succeeded in killing twelve ewes.

Lambing and Summering

The ewes started to lamb on March 25th and the 94 ewes left after the trouble from the dogs all had lambs there being 118 born and 112 of these were saved.

The ewes and lambs were turned out on grass on May 13th having been shorn May 26th the average weight of fleece being 8.5 pounds. They had the run of about 18 acres of cultivated pasture grassess on the irrigated land and in addition about si xor seven acrse around a small artificial reservoir and on the canal bank. This supplied sufficient pasture until about the end of August when the fee became rather scarce. During the summer two ewes died, and nine lambs were killed by coyotes and dogs, leaving at weaning time, Oct. 1st, 92 ewes an 103 lambs.

Financial Returns

The following gives the financial returns from the investment:

102 lambs (present		
Total cost. 106 ewes	$1,098.50	
Cost of 1 ram.....	42.50	
Cost 4300 lb. grain.	75.25	
Cost of 4½ tons hay.	40.50	
Cost of shearing....	11.40	
Wool 809 lb. @ 64c.		517.76
92 ewes present value)		1380.00
1 ram (present value)		40.00
value		918.00
Profit	1,587.76	
	$2.855.76	$2.855.76

In the above statement nothing is allowed for labor. This is an important item but will vary with the circumstances. On a farm fenced with woven wire it will be reduced to a small amount. The destruction of weeds on a farm will go a long way to compensate for the labor involved in their care.

SHEEP ARE GOOD SCAVENGERS AND WEED KILLERS

As scavengers, sheep are certainly good and for this reason alone a dozen of fifteen head of sheep might well be carried on a farm or ordinary size—say one that contains a hundred acres. Cattle in the pasture refuse to eat the weeds along the fences and here is a place where sheep come in handy, since they seem to relish the weeds almost as much as grass. Many farmers have found to their everlasting pleasure that a few sheep turned into a corn field that is weedy will soon rid the field of the weeds without doing any particular damage to the corn. Of course if the corn is about ripe, after the sheep have eaten up the ragweeds and other foreign plants in the corn field, they may tackle some of the ears of corn, but they will not do this nutil they have exhausted the supply of weeds.

In cleaning up old brush rows or pastures that are intended for beraking, sheep do excellent work since they sprout the stumps so completely that the sprouts are killed out during the first season of pasturage. The following spring this land can be broken very well.

Rotate the Pasturage

Where sheep are kept as one of the major businesses of the farm, particular attention must be paid to the pasture upon which they graze, since there seem to be a number of internal and external parasites that prey upon the wooly creatures. After sheep have pastured upon one piece of land two seasons it is high time that they were moved to the next pasture.

Another point that often comes up regarding sheep is that of shelter during the winter. When it is taken into consideration that when winter draws on the sheep have all the way from two to five inches of wool covering their backs and when we remember how warm woolen clothing is, we are in a position to know at once that the sheep do not require a very warm shelter. The most successful sheep men do not give the sheep close shelter at any time of the year, except the ewes, for a few days just at lambing time.

Dogs, no doubt, contribute some thing to the loss of sheep and whether or not there happens to be a law to to that effect I should feel perfectly free to shoot any dog that was nosing about the sheep yards. Until secure protection from dogs can be legislated through, sheep men should take precautions by building high dog-proof fences about the place where the sheep stay nights. Under present conditions however, there can be no doubt but that it will pay to take on a few sheep, but as with all other ventures, he who makes th eventure should know the limitations of his enterprise.

I. J. MATTHEWS.

CLEAN UP THE WASTE PLACES

"I would not know how to do good farming without sheep," declared George McKerrow of Wisconsin, one of the best and most widely known sheep breeders of America upon a re-

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight aud dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

MRS. M. SUMMERS, Box 309

Read My FREE Offer:

To Mothers of Daughters, I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten day trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

Windsor, Ontario

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THAT WAY FOR TWO YEARS.

Those who have never been troubled with kidney trouble do not know the suffering and misery which those afflicted undergo.

The dull pains, sharp pains, and quick stinges, all point to the fact that the kidneys require attention.

Doan's Kidney Pills are a specific for all kidney troubles.

Mrs. Albert Williams, Edam, Sask., writes:—"I have the greatest pleasure in telling you what Doan's Kidney Pills did for me. Ten years ago I was so bad with my kidneys that I would faint away, and could not stand to do anything. I had been that way for two years, and had done all I could, but did not get any better until one day some one put a little book in our door, and I saw how another young girl had suffered like I was then, so I thought I would try them, and I am glad to say that after taking four boxes I have never had the same thing again. Thanks to "Doan's."

When asking for "Doan's Pills" see that you get the oblong grey box with the trade mark of a "Maple Leaf." Price 50c; put up by The T. Milburn Co., Limited, Toronto, Ont.

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UPPER AND LOWER SCHOOLS
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Headmaster

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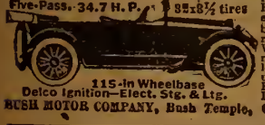

BUSH MOTOR COMPANY, Bush Temple,

Advertise in the Farmer

cent visit to the Food Administration in Washington. "Why," he continued. "Because my sheep use up the wastes of the farm. They clean up the grass, weeds, brush and gleanings, and in so doing turn into cash what otherwise would be lost."

Mr. McKerrow knows sheep, and his knowledge comes from a broad experience gained in 51 years of breeding them. His is a story filled with romance, faith and devotion to an ideal that covers a span of years from the time an eight-year-old farmer lad, who had saved his pennies and nickels and bought an aged ewe, which in turn produced two ewe lambs, down to the present, when thousands of sheep "eliminate the waste" on his 2300 acres.

"Sheep," said Mr. McKerrow, "make the most economical gains of any kind of live stock, because they clean up the odds and ends. They are particularly useful on the farm in the fall of the year, for they turn into mutton the things that otherwise would not be used. At the same time, they save the feedstuffs that would be given them if they did not have access to these other things."

After harvest, Mr. McKerrow's sheep are turned into the oat fields for a few hours the first day; an hour or two longer the second day; and the time gradually increased until at the end of a week they have complete possession of the fields. The lambs are permitted to enter the corn before it is cut, and they clean up on the weeds and lower corn plant leaves. The lambs do not pull down the lower ears of corn as do the sheep. Roots are grown for the cattle and sheep on Mr. McKerrow's place, and after the larger roots are hauled into storage for winter use, and eat thet-a6 into the field and eat the smaller ones that remain. Both the sheep and lambs are turned into the aftermath of the meadows, and this brings them into winter quarters in good condition.

Another profitable practice on this farm is that of plowing up fields that become weedy after harvest. These fields are sown to rape and turnips, and later the sheep are turned in. They eat the rape and turnip tops with relish, and will later hollow the meat from the turnip, leaving but a shell.

Mr. McKerrow has found that a frequent change of pasture is beneficial to the sheep. 36-inch woven wire fence in 20-rod lengths is moved about, thus preventing the too short cropping of the grass, and, furthermore, reducing the internal parasite plague to a minimum. Water is also an important consideration, and ewes particularly should have water, the same as dairy cows.

"I would not go so far as to say that there should be some sheep on every farm," declared Mr. McKerrow, "for peculiar conditions might not make it practical, but I do believe that there should be sheep on the vast majority of farms in this country. They turn waste into cash. The sort of saving that the good housewife is making in her kitchen can be practiced with corresponding effectiveness by the use of sheep on the farm."

DETERMINING THE AGE OF SHEEP

The age of sheep can be told largely by the appearance of the permanent incisors. The sheep, like human beings, have two sets of teeth; the first set known as "milk" (temporary) teeth, being replaced by permanent teeth. When a sheep has a full set of teeth we find eight of them on its lower jaw in front, but none on the upper jaw. The temporary incisors that are characteristic of lambs are quite different from the permanent ones which begin to appear when the lamb is about one year old. The temporary incisors are uniform in size and shape, are long and narrow and constricted at the neck, and are white in color. The first pair of central permanent incisors usually make their appearance when the lamb is from twelve to fifteen months old. The next pair, that is, one on each side of the central pair, make their appearance about one year later, so that the sheep has two pairs of permanent incisors when it is a little over two years old. The third pair appears the next year, making the sheep slightly over three years old when there are three pairs of permanent incisors. The last or fourth pair, that is the corner incisors, appear when the sheep is slightly past four years old. As a rule the sheep has a "full mouth" at five years of age. We often find that the changes of teeth are somewhat irregular, varying with individuals and feed conditions. After four years of age the exact age of a sheep cannot be definitely told by its teeth. However, experienced sheepmen can guess quite closely from general appearance. With advancing age, the teeth become wider apart and, when shed, handicap the sheep greatly in grazing and feeding. After five years of age, a ewe is likely to have a broken mouth and be less thrifty on that account. Two-year-olds with their first lambs are not as reliable as older ewes, hence the commercial flock should be largely composed of ewes from three to five years old. However, in pure-bred flocks a good breeding ewe is usually kept as long as she will breed.

CROWN BRAND CORN SYRUP

The most delicious of table syrups for Griddle Cakes and Hot Biscuits. Excellent for home made candy.

In 2, 5, 10 and 20 pound tins—
3 lb. "Perfect Seal" Glass Jars.

Write for free Cook Book.

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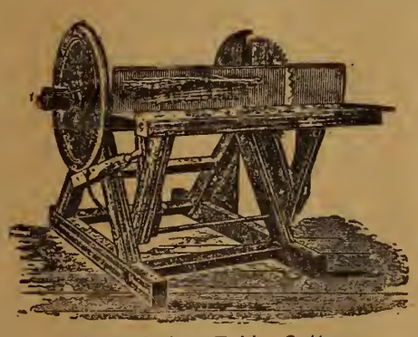
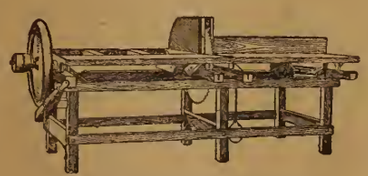
MONTREAL. 30

Why Sussex Wood Cutters Satisfy

It's in the Design



Short Swing Table Cutter



Flat Roller Table Cutter

TABLE made of heavy steel plating, bottom and back in one solid piece firmly bolted to birch frame.

FRAME made of well seasoned birch, mortised and bolted together.

ARBOR of best quality machinery steel 1¾" diam.

BALANCE WHEEL solid webb weight 150 lbs.

PULLEY solid for use with engine or ratchet collar for Tread power.

BEARINGS of high grade babbitt, and grease cups attached.

SAW, best quality 10 guage guaranteed.

Our Long Swing Table cutter is the most popular machine on the market. Ask our nearest agent or write us for full particulars, it will pay you.

Remember, we are sole manufacturers of the famous Star Feed Cooker and Star Root Pulpers.

Prompt Delivery guaranteed.

The Sussex Manufacturing Co., Limited,
Sussex, New Brunswick

THE HORSE

CURING HORSE OF NERVOUSNESS

I notice a lot of people offered preventativees but none a cure in handling the mare that would run away every time she got her tail over the line. Take this mare into the yard where there is plenty of room, put a surcingle around her body and buckle one front foot up to it. Tie a rope to the halter and pass this through the surcingle on the same side on which the foot is fastened up. Now step to the head of the animal and pull on this rope, which should be about 14 feet long. The animal will turn her head to the side and gradually sink down on her knee.

When she is completely down pole her all over. This is done by using a piece of broom stock or something similar about three feet long, starting at the ears, and rubbing back over the body. If the animal appears nerous when you are rubbing any particular spot start over again and go back until she has lost this nervousness.

You will need an assistant. Let him hold the animal down while you pole her until she is thoroughly submissive. After you let her up go over her again until you can handle her at will and she will not flinch or become nervous when you are handling her tail. Possibly you may have to throw her again or repeat the process several times.

Put on an open bridle and lines and drive her around for a while and let her get the tail over the line If she still is frightened throw her again and repeat the treatment.

The next step is to hitch her up the way she has been driven, leaving the throwing apparatus on her, and if she shows the least sign of kicking pull her to her knees again. After she gets so she won't resist when her tail is over the line, take the appliances off gradually. In working her, of course the foot is not straped up, but leave an ankle strap on her so that you can pull the foot up if you want to.—E. L. Drake.

PREPARING THE HORSE FOR THE SHOW RING

In succesful showing horses of any type, there are a few points which must always be kept in mind. It is, for instance, of prime importance that the horse be fat. No matter how much individual excellence he may possess, he can never win favor in the judge's eye if he is sent into the ring in a half-fat condition.

Fat is like charity, it covers a multitude of—not sins—but faults. It fills up the low places and smooths off the rough points, and in general adds to the look of the animal—giving the impression of abundant vigor and good health. There is no secret about getting a horse fat. It just takes feed, and then more feed. Feeding a horse is an art most anyone can master, if he just keeps in mind the fact that for the best results a horse should be provided with a palatable ration made up of a variety of good clean feeds in sufficient quantities.

It is a practice with some horsemen to add eggs to the ration in order to get a fine glossy coat of hair. Eggs will, no doubt, answer the purpose but a little oil meal added to the feed will prove equally efficient and will be found to be much cheaper. The best way to secure a beautiful coat of hair is to groom well and regularly. A curry comb should have a very small part to play in teh preparation of the show horse. A good stiff brush will answer just as well, and be far easier on the horse. After a thorough brushing to loosen the dandruff and dirt, the horse should be gone over with a softer brush, or better still, a grain sack makes an excellent rub rag, or a damp wisp of hay. Nothing will add lustre to the hair more quickly than simply going over the horse with the open hand, using plenty of elbow grease.

During the time of preparatoin, keep the horse blanketed to ensure the hair staying smoot and glossy. Care should always be taken to give the horse plenty of exercise, otherwise he may go off his feed; but do not exercise him so much that he will lose the fat he has put on.

Next to good condition in the matter of flesh, nothing is a greater asset to a horse than good manners. Weeks before the show, the horse must be carefully educated in the way he is to be shown. Every day the horse should be handled exactly as he will be expected to perform in the show ring. Teach him to walk straight, square and fast; then teach him to trot in the same way, always moving with the utmost freedom, but under perfect control all the time.

If he is to be shown in halter, the attendant should always keep on the left side, and just abreast of his shoulder. The halter rein should be loosely coiled in the right hand, and held at a point about 8 or 10 inches from the bit or halter ring. A long rein must never be used, and no matter what happens, keep close to the horse's head. There is nothing more objectionable in the show ring or more distracting than to see agroom trying to control and show a horse at the end of a 15 foot leading rein.

The horse must be taught to stand perfectly quiet and to behave properly in company. It is a common practice in standing a horse to place him in a stretch. This is all right, and a horse will usually stnad more quietly in such a pose, but to force him to stand at an extreme stretch will defeat the purpose and distract from the exhibit.

If the horse is to be shown in harness, he should be exercised, but not so much as to take off the necessary fat. He should be taught to get away at his stride quickly and to make his turns easily and with plenty of dash.

After these preliminary lessons, and before he is sent into the ring, there are a lot of finishing touches which can be put on, and which will add a great deal to the attractiveness of the entry. The feet should be in good shape and a piece of emery paper may be used to smooth the hoofs. The fetlocks should be trimmed, unless the horse be of a breed where plenty of "feather" is a characteristic. The ears, too, should be trimmed, thus giving a neat and clean appearance to the whole animal.

Decorations undoubtedly add much to a horse's appearance and can always be employed to advantage, provided they are not overdone. This is an art that cannot be learned from books. Experience is the only way to learn how to put on the elaborate rolls and braids in mane and tail, but it is not difficult to put on a few ribbons or paper flowers. It is sometimes a help to look up some illustrations in the magazines and thus get a general idea of how it is done, so as to show off a horse to best advantage. A mistake a novice often makes is to overdo the decorations. It is better to have too little rather than too much.

A few words of advice to the groom who has charge of the horse on show day. Let him be a master of himself

Gombault's Caustic Balsam

The Worlds Greatest and Surest Vetorinary Remedy

HAS IMITATORS BUT NO COMPETITORS!

SAFE, SPEEDY AND POSITIVE.

Supersedes All Cautery or Firing. Invaluable as a CURE for

FOUNDER,
WIND PUFFS,
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BONY TUMORS,
LAMENESS FROM SPAVIN,
QUARTER CRACKS,
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REMOVES

BUNCHES or BLEMISHES,
SPLINTS,
CAPPED HOCK,
STRAINED TENDONS.

SAFE FOR ANYONE TO USE.

We guarantee that one tablespoonful of Caustic Balsam will produce more actual results than a whole oottle of any liniment or spavin mixture ever made Every bottle sold is warranted to give satisfaction Write for testimonials showing what the most prominent horsemen say of it. Price, $1.50 per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use.

The Accepted Standard VETERINANY REMEDY

Always Reliable. Sure In Results.

None genuine without the signature of The Lawrence-Williams Co. Sole Importers & Proprietors for the U.S.& CANADAS. } CLEVELAND, O.

Finds Caustic Balsam to be Reliable.

I can say that I have for the past three years been a user of GOMBAULT'S CAUSTIC BALSAM, and have found it to be all that is claimed for it, and have in a great many instances recommended its use to others.—R. D. KIRK, Antigonish, N.S.

Canadians Appreciate Caustic Balsam

I have been selling GOMBAULTS CAUSTIC BALSAM for years, and it is giving my customers the best of satisfaction. I have also used it myself on different ailments with the best results. Too much cannot be said in its favor.—W. T. PRICE, Berkeley, Ont.

Sole Agents for the United States and Canada.

The Lawrence-Williams Co.

TORONTO, ONT. CLEVELAND, OHIO.

NEW YEAR TERM

opens on Monday, January 7. Make this year one of advancement. Be better prepared to grasp the opportunities presented to you. Opportunities always come to those properly prepared to receive them. Get your training at the

Moncton Business College,
Moncton, N. B.

It pays to attend an Accredited School.

THE WINTER TERM
of the
Fredericton Business College
opens on
Monday, January 7, 1918

Pamphlet giving particulars of our courses of study, rates of tuition, etc., will be mailed to any address os application.

W. J. OSBORNE, PRINCIPAL,
Fredericton, N. B.

Advertise in the FARMER

Influenza

Nothing I know of will give such prompt relief from this disease as Chamberlain's Cough Remedy. The pain in the chest disappears, the fever goes down, and the whole body feels better. After effects of the disease can also be avoided by taking

Chamberlain's Cough Remedy

I have never known a single case of influenza to result in pneumonia when Chamberlain's was freely given, and the cough following influenza speedily yields to this splendid remedy.

Yours for health,

—Granny Chamberlain.

32

ABSORBINE STOPS LAMENESS from a Bone Spavin, Ring Bone, Splint, Curb, Side Bone, or similar trouble and gets horse going sound. **Does not blister or remove the hair** and horse can be worked. Page 17 in pamphlet with each bottle tells how. $2.00 a bottle delivered.

Horse Book 9 K free.

ABSORBINE, JR., antiseptic liniment for mankind. Reduces Painful Swellings, Enlarged Glands, Goitre, Wens, Bruises, Varicose Veins, Varicosities, heals Old Sores. Allays Pain. Will tell you more if you write. $1 and $2 a bottle at dealers or delivered. Book "Evidence" free. Manufactured only by W. F. YOUNG, P.D.F. 124 Lymans Bldg., Montreal, Can.

Absorbine and Absorbine, Jr., are made in Canada

VETERINARY COURSE AT HOME

Taught in simplest English during spare time. Diploma granted. Cost within reach of all. Satisfaction guaranteed. Have been teaching by correspondence twenty years. Graduates assisted in many ways. Every person interested in stock should take it. Write for catalogue and full particulars - - **FREE**

LondonVet. Correspondence School
Dept, 47 London, Ontario, Can.

Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Address

Mrs. M. Summers
BOX 309 WINDSOR, Ontario

TAKE NOTICE

We publish simple, straight testimonials, not press agents' interviews, from well-known people.

From all over America they testify to the merits of MINARD'S LINIMENT, the best of Household Remedies.

MINARD'S LINIMENT CO., LTD.

CALIFORNIA OR FLORIDA THIS WINTER

If you contemplate spending a part of the coming winter in California, Florida, Bermuda, the West Indies or any of the many beautiful Gulf Coast Resorts, consult J. H. Corcoran, T. P. A., G. T. R., Moncton, N. B., for full information, tickets, reservations, etc. The Grand Trunk affords various routes. Special fares are now in effect—stop-over privileges are allowed.

Advertise in the Maritime Farmer.

as well as of his horse when parading the horse. Remember that the work of a whole year is now going to be decided by the judges, and much depends upon how the horse is handled. Be quiet and unostentatious. Behave so as to inspire confidence in your horse. Do not shout or speak roughly to the horse. Speak quietly and calmly to the horse so as not to excite him. The whip may be seen in the show ring, but remember it is never used. Keep on good terms with your horse.

Lastly, remember that the man who wins will likely as not be he who has expended most work and pains on his horse, and wins by a few touches you could have equalled yourself had you the same detereminatoin to win.

B. C. TILLET.

CARING FOR THE HARNESS

The life of leather can greatly be prolonged by keeping it free from mud and well oiled. Mud is more destructive to leather than a moderate amount of wear, an water is even more destructive. Accordingly, one of the main things to be observed in the proper care of harness, is to keep the leather free from mud and water by frequent cleaning and oiling. Leather which has the proper amount of oil is pliable, and pliable leather is wear resisting.

Before attempting to oil harness unbuckle every strap and wash it clean with warm, soft water in which there is a little castile soap, using a sponge or cloth. When the leather is nearly dry apply the oil.

Vegetable oils being hardening in their effect (except castor oil) should not be applied. Neats-foot oil is considered one of the best dressings for harness. If the leather has become too dry, or has not been washed, it is necessary that it should be dampened before the oil is applied, so that it penetrates the leather thoroughly. One quart of neats-foot oil, four ounces of beef tallow and three tablespoonfuls of lamp-black makes a good dressing ofr leather of all kinds.

There are several ways in which the oil may be applied. It may be rubbed in with a woolen rag saturated with the oil, rubbing every part of the leather save the patent parts. Another way is to pour a quantity of the oil in a shallow vessel and pull the leather parts back and forth in the oil until saturated. Pass the leather back and forth slowly and rub the oil in with a sponge or woolen cloth. In either case be sure that a little more oil is applied to the buckle holes; the belly-bands, breechings, lines and straps that buckle in the bit all need an extra alllowance. On old harness that is very dry, dress with castor oil before washing; this will prevent penetration of the water, which resists oil.

HAULING A TON WEIGHT

An experiment has recently been concluded in California to determine just how much a horse pulls when he draws a ton. A good draught team was used for this purpose. The horses weighed 1600 pounds each. They were hitched to an ordinary farm wagon, and pulled a load of 6,000 pounds over different kinds of roads. The wagon was a standard farm wagon with steel axles of equal length, wheels 38 and 46 inches in diameter, and fourlinch tires.

A recording dynamometer was used to registrer the tractive force of the team. This instrument makes a record of the resistance on a strip of paper under a recording pencil, and after the test, the total pull of the team can be read off in pounds. The record of the test is as follows:

On a concrete road, unsurfaced, in excellent condition, the total pull on the load was 83 pounds, or 27.6 pounds per ton.

On a concrete road with ⅜ inch suracfe of asphaltic oil and screenings, road in excellent condition, the totad pull was 147.6 pounds or 49.2 pounds per ton.

NEVER SLIP
RED TIP
Conserve time, money and your horse's strtngth by using
RED TIP CALKS
They will enable your horse to travel on slippery, icy roads and streets in absolute safety. They can be adjusted in a few minutes and make you ready for the road any time—day or night—eliminating danger and delay.
Neverslip Calks and Shoes always have Red Tips
Get them from your horsehsoer now
Booklet J will be sent free on request.
THE NEVERSLIP WORKS, 559 PIUS IX AVE., MONTREAL
U. S. Factory, New Brunswick

On the ordinary macadam road in excellent condition, the total pull was 193 pounds or 64.3 pounds per ton.

For a gravelled road, compact, and in good condition, the total pull was 2225 pounds or 75 pounds per ton.

An earth road, firm, with 1½ inches of fine, loose dust, the total pull was 276 pounds or 92 pounds per ton.

An earth road, with mud 4 to 6 inches deep, but soil firm underneath the total pull was 654 pounds or 218 pounds per ton.

On gravelled road before the gravel had been compacted, but when it was in ordinary loose condition after it had been placed upon the road, the total pull was 789 pounds or 263 pounds per ton.

CURING THOROUGHPIN IN HORSE'S LEG

Is there any cure for thoroughpin ? I have a horse that has got it; he never seems lame and it seems to come on through apparent cause?

H. A. C.

Thoroughpin is caused by severe strain on the joint principally through hard work. It seldom does any harm and is only objectionable as an eye sore. Lameness from it is very rare. It cannot be permanently cured, for, when made to absorb by treatment and rest, it will return with work. One way recommended to treat it is to apply a cooling lotion made as follows: 1 ounce muriate of ammonia, 1 ounce saltpetre, 1 quart water mixed together. Bathe the part with hot water, rub dry, and apply the lotion three times a day and give complete rest. Some advocate blistering but this results in thickening of the skin and leaving a permanent ruffle in the hair which only increases the apparent size of the puff when it returns.

COLT HAS SCROTAL HERNIA

Subscriber—"Sucking colt appears to be ruptured. Has been this way since birth, but did not pay any attention to same, as I thought that it was just the testicles. On examination I find both testicles, one of normal size, and the other one the size of one's fist, coming to normal at the back, which is of a soft texture. Will this be a rupture or an enlarged testicle; and what will be the safest treatment, as this is a valuable colt? Said colt it twom onths old, and is in excellent condition."

Answer—This colt has scrotal hernia or rupture at the bag containing the testicles. This form of rupture often disappears with the growth and development of the colt. The best plan in a case of this kind is to allow nature to take its course for a few months in the hope that as the colt grows and develops the rupture will disappear. If, at the end of three months' time, the rupture is getting larger, it would then be advisable to have it operated on by a veterinary surgeon. The operation for these cases is known as the "covered operation" of castration, and is very successful. Would advise you to follow the above course.

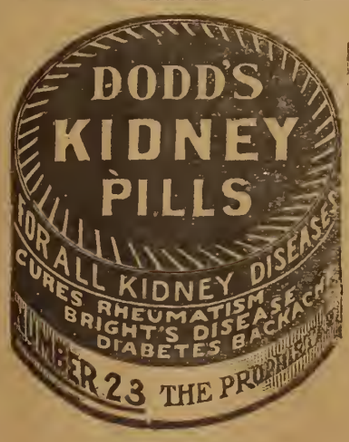
CANADA'S POSITION

Covering the years 1911-1916 Canadian total net exports of hog products were only 6.08 per cent. of the total British imports of such products.

The receipts or hogs at Canadian stockyards in September were only 64.53 per cent. of those in September 1916.

MONTREAL LIVE STOCK

MONTREAL, Dec. 3.—The week's receipts at the West End Cattle Market, 1,300 cattle, 1,100 sheep and lambs, 2400 hogs and 300 calves. This morning offerings on the market were light, and amounted to 700 sheep and lambs, 500 hogs, 200 calves. There was a good demand shown all around for th various lines and some brisk trading ensued. Prices were a little better in cattle lines on the increased buying and sold as high as $17.50 for choice Ontario stock. There was a weaker tone in hogs and prices scored a decline. Choice selects were $17.25 to $17.50. Canners' cattle were unchanged at $5 to $6. Quotations: Choice steers $10 to $10.59; goood steers, $9 to $9.50; medium, $8 to $8.75; choice butchers' bulls, $7.50 to $8; good bulls, $7; medium, $6.25 to $7; choice butchers' $8.50 to $9; good cows, $7.25 to $8; medium, $6.50 to $7; canners' cattle $5 to $6; sheep 12; lambs choice, $17.50; Quebec $15.50; choice select hogs. $18; good selects, $17.50; sows, $16 to $16.50.



HAD WORST CASE OF CONSTIPATION

DOCTOR EVER KNEW.

Although generally described as a disease, constipation can never exist unless some of the organs are deranged, which is generally found to be the liver. It consists of an inability to regularly evacuate the bowels, and as a regular action of the bowels is absolutely essential to general health, the least irregularity should never be neglected.

Milburn's Laxa-Liver Pills have no equal for relieving and curing constipation and all its allied troubles.

Mrs. F. Martin, Prince Albert, Sask., writes:—"I had one of the worst cases of constipation my doctor said he had ever known, and Milburn's Laxa-Liver Pills cured me of it. My father-in-law had used them, in fact he was the one who gave them to me. A number of people around here use them, and they all say that they are the best pills they ever used."

Milburn's Laxa-Liver Pills are 25c. a vial at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

POULTRY.

EARLY PULLETS VS. OLD HENS FOR EGGS

(Experimental Farms Note)

For porfitable early winter egg production the early hatched pullet is three times better than the late pullet, four times better than the yearling hen and thirty times better than the "aged" hen.

Early pullets are best for winter eggs. This has been demonstrated many times. The Poultry Division, Experimental Farm, has collected figures for several years and when the three months (November, December and January) only are taken into consideration the relative profitableness of the four ages is as noted above. If the six winter months were considered the contrast would not be so striking for the hens and the late pullets were just beginning to lay when the experiment closed. However, if eggs alone are to be considered we cannot afford to feed birds until towars spring before they produce. Even if desired for breeding it is a question if, with the high price of feed, we had not better rely upon the well matured pullet for hatching eggs next spring rather than feed hens that will not produce or only at a loss. Certainly there is no excuse whatever for keeping in our poultry houses late pullets wrose eggs cost more than they are worth and birds that are absolutely useless as breeders.

This summary is of results that extend over four years and are taken from several of the farms of the system so that figures will indicate fairly well what hay be expected for these three months.

These figures show that early pullets (hatched before May 1st.) produced eggs at a cost for feed of 18.3 cents. The late pullets (hatched after May 15th) at a cost of 56 cents. The year old hens at a cost of 78.2 cents, and for every dozen eggs laid by the hens in the aged class the cost of feed was $5.73.

Again these facts should be emphasized (1) that for profitable egg production birds should lay before February. (2) Early well matured pullets are the only birds that may be expected to do this. (3) Late pullets as a rule will not pay to keep. (4) For eggs, hens are not profitable. (5) If we have a good flock of eraly pullets, for the time being depend upon them for breeding. (6) It is a national loss to keep birds that eat a dollar's worthh of feed to produce fity cents worth of eggs.

MITES ON POULTRY REDUCE PROFITS

Chicken mites, the night pest of poultry may not always leave the fowls before daylight as commonly supposed, but may remain in the feathers in such numbers as to make poultry possible carriers of this pest to uninfested places. This fact was brought out recently by an entomologist of the U. S. Department of Agriculture in the course of a study of hte life history and habits of the chicken mite, undertaken to discover principles on which combative measures might bc based.

To prevent the introduction of this serious pest in mite-free flocks by means of new stock, the specialist suggests these precautions: New stock not known to be free of mites should bc isolated the first few nights and allowed to roost on new roosts wrapped with pieces of folded paper. The object of using the paper is to furnish a convenient place for the mites to hidc. The paper should be examined and if mites are found, the fowls should be kept on these roosts five or six days or until no more mitcs come off the fowls. Rcmoving and destroying the papers an dtreating the roosts thoroughly with kerocene or crude oil will prevent an infestation.

Methods of combating this pest include the spraying of the roosts and living quarters with crude petroleum or coal-tar products. One of the most effective sprays is a so-called wood preserver, consisting of anthracene oil with zinc chloride added. The cost of this spray is about $1 a gallon but twice the quantity may be abtained by reducing with cqual parts of kerosene.

POULTRY IN PLACE OF BEEF

In the ntcrest of food conservtaion, and that we may supply our own soldiers and those of our allies, with beef in plenty to keep them in good physical condition and fit to fight our grat battels for us, thc United States Government is urging us to use more poulthy and eggs as our hearty food on our own tables, and to gretaly lessen the amount of beef used. This is a wise suggestion and one that all farmers especially, should follow. Pork is not as easily preserved annd transported as beef and the farmer who cares for it may raise and use it, bue even then he should raise and use more poultry and eggs, for a meat diet of pork alone is not conductive to health and happiness. Too much pork is bad anyway.

Of course we can have the beef—for a while—if we insist, but unless we conserve the food and conserve it diligently, the time will come only too soon when there will be no more beef available, either for us at home or for our soldiers abroad. Beef cattle are scarce now, and growing more so every day. The herds must be replenished, and it will take years to do it, therefore they should not be further depleted. Poultry may be raised quickyly, supplying excellent meat at a cost no greater than that of beef, and every farmer who makes this substitution of meat for his own table is performing a patriotic duty without in any way inconveniencing either himself or his family.

The exorbitantly high cost of grain is given as a reason for curtailing in the poultry business, but it is no reasonable excuse. If we look at the matter fairly, we must admit that increased cost in feed is, even if too great, not greater than the selling value of poultry and eggs, and not much, if any greater than the increased cost of other things used on the table. As a matter of fact, poultry and eggs may now be produced proportionately cheaper than either beef or cattle for the same percentage of food value—at least, the food experts affirm that this is so, and it would be exceedingly difficult to prove that they are wrong.

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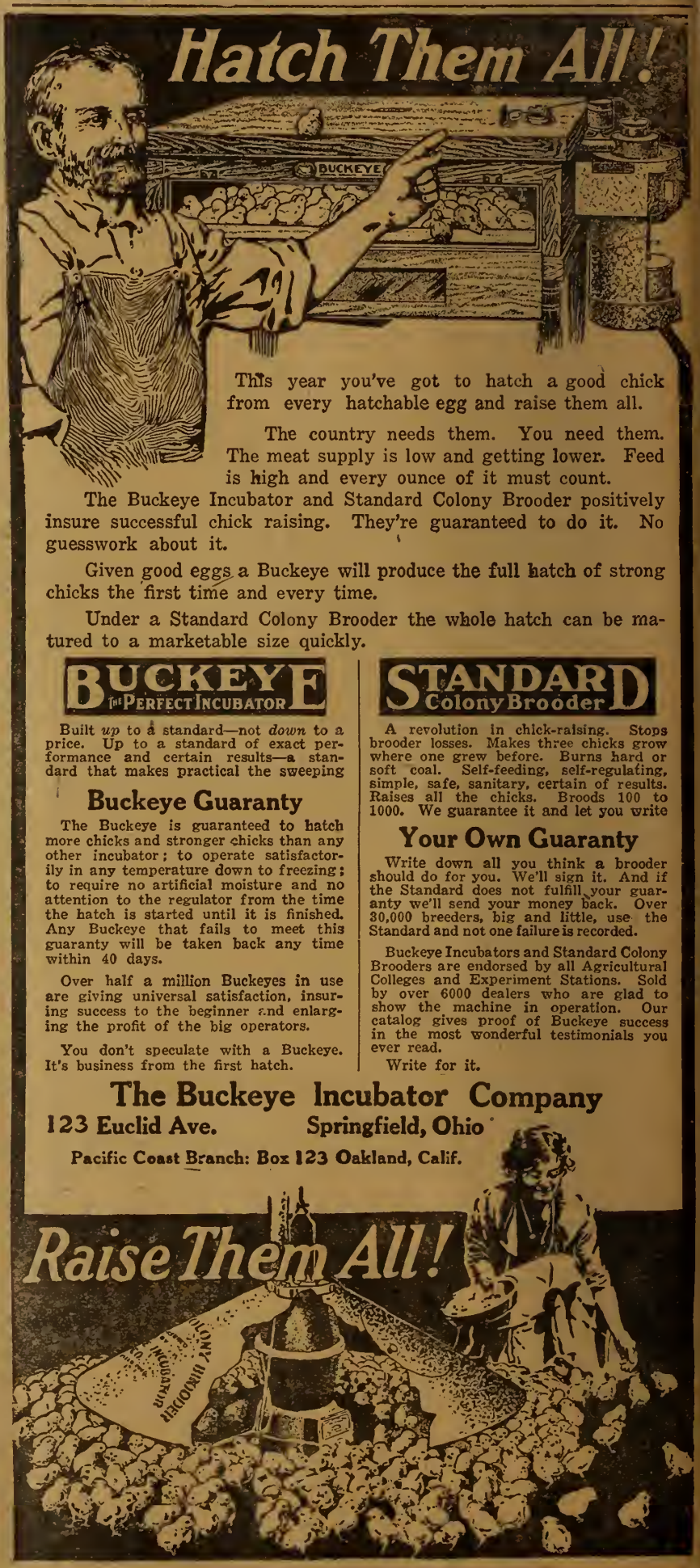
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meat that can be produced and matured as quickly as poultry, and there is no food of equal value that can be put to as many uses and made palatable and nourishing in as many ways as eggs. Now that we must curtail in the use of wheat bread, sugar and the other articles of food which are becoming scarce, we must be more careful and consistent in the use of those articles of food which we are able to produce ourselves, so that we may become less dependent upon others and more nearly self supporting in actual production as well as earning capacity.

nAother thing that should be remembered is that with a shortage of beef, there is going to be a greater demand for both pork and poultry facts of which the farmer may well take advantage of in a business way. In the next year or two, and perhaps for several years after that, there will be a largely increaser demand for both poultry and eggs because of the war, rather than otherwise, and the same will be true of eggs as well. This will, of course mean good prices right along, and a porfitable business for those who take advantage of conditions and seek the best markets. It is likely that these conditions, modified of course by varying circumstances, will continue as long as the war lasts, and there is no likelihood that more poultry and eggs can be produced, no matter how high prices of grain may soar, than can be used to good advantage or sold at a good profit.

H. L. Goodwin.

TELLING THE LAYING HEN

To make a success it is imperative that we know our hens. We must test their abilities. We cannot afford to keep drones.

Therefore, we must adopt some method by which we can determine the good from the bad. Noticing a hen repeatedly upon the nest is not a guarantee that she is about to lay. In using trapnests, I have almost daily captured hens on the nest, but no egg and their annual records were ver low.

Every time a hen cackles when coming out of the laying room, is no criterion that she has laid. I believe it was Collingwood who once said: "A cackling hen is either a layer or a liar" and in using trapnests, I have found quite a number of these cacklers to be "liars."

So prior to the adoption of trapnests, the selection of layers has been more or less guess work. It was said by some writers that "spare and leggy birds are the best layers." This opinion no doubt was based upon the act that the Mediterranean class is built after that fashion.

This view was corroborated by the late Francis A. Mortimer, when he said that he found that hens with short legs, chunky bodies, short necks and small heads, are as a rule, indifferent layers. This would seem so from the standpoint that such hens are more of the meat order, but trapnests have told us that during the last few years our chunkiest Wyandottes were in the front row of layers.

Felch said the pullets that commence laying earliest in life are the ones to lay the largest number of eggs through life. There is some logic in that, but we cannot always tell our earliest layers if we have no system of trapping them.

Some years ago there was quite a discussion of the so-called "egg type." Nearly all these opinions were based on the style of the Leghorn, but some writers differed. For example, one writer said that good layers have a "long, slim body, are broad across the shoulders, are triangular, deep in front, not compact, and havt legs of good length." Another differed by saying: "Carefully avoid the leggy high-built, reared-up hen of the game cock style. It is the short-legged, heavy-set, motherly-lookisg hen that shells out the eggs." Many references could be given on this type quesiton, but the opposites, quoted above, are fair samples of representatives made in early days.

There is but one sure way of finding out which are the workers—we must catch the hens in the act. Each hen is to be known by the number on the band or ring that is placed on her leg. Catching the hen in the trapnest, her number is ascertained, and this marked on the egg. Each evening after the eggs are gathered, these numbers are properly creddited on a record blank provided for this purpose. At the end of the year we know for a certainty how many eggs the hen has laid. Not only that, but we also know the size of her eggs—whether normal or not—the color, whether white, brown or tinted.

I do not, however, employ trapnests soley for the purpose of finding out which are my best year-round layers. I want to know which are the profitable workers during the late fall, winter and early spring—times when eggs bring the best prices. It is not a quesoion (with me) how many eggs a hen lays in a year, but how much money her product brings. If it is possible to concentrate the bulk of her crop in six months of the uear, when prices are high, and induce her to "take it easy" during the warm months, devoting the most of that time to broodiness and molting, I will have a stronger stock, and consequently more profit.

In couclusion let me state that there is but one guaranteed way of determining our profitable layers, and that is by the aid of trapnests, and no poultryman can afford to do without them. It will mean a profit in the crop, and a saving of feed, room and labor. M.K.B.

Brain Power!
"Burning the Midnight Oil," is a dangerous occupation unless the body and brain are suitably tuned up for the occasion. Over-work frequently results in break-down, breakdown means loss to business, lost time—disorganization. Those who put extra burdens upon the brain through the necessity of continuous concentration of the mind need a food that has a large percentage of Carbo-Hydrates, Proteins and Fats. COCOA—when mixed with milk, contains these essential ingredients in abundance. It is the ideal food drink for such occasions and for the best and surest results use only.
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CANNING CHICKEN

There is no question but that the best place for cull chickens is in a jar, ready for table use. Canning changes a non-productive fowl from a libility into an asset. Such a chicken does not eat high priced feed, does not require daily attention and takes up much less space on the pantry shelf than it does in the poultry house. At a few moments notice the canned chicken can be prepared for the table in any one of many appetizing ways: fried chicken, smothered chicken, stewed chicken with dumplings, creamed chicken, chicken a la King, chicken and rice croquettes, loaf, salad or practically any way fresh chickwhole.

Method 1 given below is for small, frying sized chickens. Methods 2 and 3 may be used for chickens of any size.

Method -—Dress the chicken, separating it into sections or leaving it whole as preferred. Season and fry as for serving. When the meat is three-fourths done remove from the fire and pack the pieces into a clean, hot glass jar. If the chicken is whole break the neck and legs, roll the chicken up into a small roll, tie with string or fasten with toothpicks. A quart jar should hold two or more small chickens. Pour over the chicken the hot liquid from the frying pan, if necessary adding hot water to fill the jar completely. Adjust the rubbers and tops, leaving the lattter slightly loose. Place in a waterbath canner and sterilize from 90 to 120 minutes, depending upon te size of the of the chicken. Remove and tighten the covers immediatetly.

Method 2—Dress the chicken and leave whole or cut into pieces as preferred. Cover with boiling water and simmer until the meat can be separated from the bones. Return the bones to the liquid and boil it down one-half. Pack the meat closely in hot glass jars, add one level tablespoonful salt to each quart and fill the jar with the hot liquid. Adjust the rubber and top, leaving the latter slightly loose. Sterilize 3 to 3½ hours in a water bath canner. Remove and tighten the tops immediately. The liquid remaining may be placed in a jar, steriiized 90 minutes and kept for soup or gravy. Two pounds of dressed fowl should make one pint of solid meat and a pint of thick stock.

Method 3—Cut the dressed, raw chicken into convenient sections and pack into jars. Add one tablespoonful salt to a quart, fiill the jar with boiling water, adjust the rubbers and tops as above and sterilize in a waterbath canner 3½ to 4 hours.

DAMPNESS IN POULTRY HOUSES FOR EGGS

Dampness in any form, whether emanating from outside sources or from within, seriously impairs the vitality of hens during the fall and winter, and directly affects production. Fowls are anatomically different form other farm animals, in that they exhale from the lungs, in the form of vapour a very large proportion of the water that the ydrik. This causes the atmosphere in the interior of a tightly closed poultry house to become very humid, and in cold weather the walls and ceilings to become frosted.

Two simple methods of removing dampness are in common use: (a) the straw loft, which consists in placing a thick layer of straw on poles or rough lumber located at intervals on the collar beams. This mtehod is, of course, better adapted to square or hip-roofed houses than to shed-roof houses. (b) The use of the cotton or open-front houses. Many people have the erroneous idea that the cotton-front houses are colder than those having many windows. It has been proven without doubt that glass is a more effective conductor of heat than cloth. Thin cotton or burlap allows the moisture in the house to pass out and brings about an equilization of outside and inside humidity.

LAYING HENS NEED GRIT

Ground feeds are necessary for most efficient digestion in poultry. Hopper feeding saves labor and furnishes the necessary supplementary feed at all times. There is no danger of poultry over eating on ground feeds fed dry in a hopper. The University of Missouri College of Agriculture is recommending the hopper as a lobor saver in the poultry yard.

Limestone grit or oyster shell is also necessary for laying hens. A laying hen requires large quantities of shell-making material. Nearly all of this must come from the grit and shell she eats. It is poor economy not to keep a liberal supply accesible. One extra egg a year will pay the bill. It returns the money invested a hundred fold.

Chickens raised on range can be produced much more economically than those kept closely confined around the farm buildings. Not only is less feed required, but the danger from disease is reduced. The edge of the corn field makes an ideal poultry range. Chickens grow best on plowe ground and the corn furnishes shade, which is essential during the summer. Under such conditions a pound of chicken can be produced from three to four pounds of grain.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

SOLDIERS OF FREEDOM

They veiled their souls with laughter
And many a mocking pose,
These lads who follow after
Wherever freedom goes;
These lads we used to censure
For levity and ease,
On Freedom's high adventure
Go shining overseas.

Our springing hearts adore them,
These boys at school and play,
Fair-fortuned years before them,
Alas! but yesterady;
Divine with sudden splendor
Oh, how our eyes were blind!
In careless self-surrender
They battle for mankind.

Soldiers of Freedom! Gleaming
And golden they depart,
Transfigured by the dreaming
Of boyhood's hidden heart.
Her lovers they confess them
And, rushing on her foes,
Toss her with youth—God bless them!
As lightly as a rose.

KATHERINE LEE BATES.

AT EVENTIDE

This very day, while I with sweet content
Fulfill the common daily round, on homely duties bent,
From many a happy home, with careless unconcern
And gay good-by, have fared forth feet that never will return.
And what hath she who waits with all the world beside,
If nevermore her loved one comes home at eventide?

And what indeed am I, that God should give to me
So glad and blest a life, a home from grief so free?
That this sweet common day, for me without a tear,
Should bring for some the crushing loss of all life holds most dear?
That kept secure from whatsoever danger may betide,
My own come safely back to me today at eventide?

Help me, O Lord, I pray, my gratitude to show
In tender, loving ministry where falls the sudden blow;
In daily walking softly, lest the terror nigh
Descend in darkness swift and deep, o'erspreading all my sky,
And there should come to sit my own hearthstone beside,
The grief of one who waits alone, alone at eventide.

O Father loving all, I gladly trust to Thee
The days to come, that good or ill, I still may see
Thy tenderness in each; and whether stress or peace
They bring, I still can praise with praise that cannot cease,
That for so man ears love hath not been denied,
And I have welcomed home so long, m own at eventide.

LILLIAN MANKER ALLEN.

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LATCHSTRING HOSPITALITY

The Worth of Simple Kindness

The other day I chanced to be in a company of women when the subject under discusion turned upon that ever fruitful topic—matrimony. Some of the women present were married, some were not, but we all contributed freely to the general discussion.

In this discussion, the subject was whether or not the marriage of the average woman tended to broaden or to narrow her sympathies.

"All true women are supposed to have the spirit of universal motherhood," some one reminded us.

"But I don't believe we have," one married woman candidly admitted. "Before I married I loved all children. I could scarcely get by a baby on the street without stopping to look at him. But now I don't feel the slightest interest in any child except my own. I think, as a rule it is the unmarried women who have the spirit of universal motherhood."

One of our number, a thoughtful, quiet little lady whose unobtrusive acts of kindness are as the sands of the sea, advnaced the theory that, "quite apart from the motherhood point of view, there is something about marriage, the very fact of two people living together in such close intimacy and having to adjust themselves somewhat to each other, which gives to character a discipline that nothing else can, and makes for unselfishness."

This philosophy was very quietly expressed, but it touched a match to an unsuspected store of gunpowder. Most of the married women present accepted it with complacent acquiesence, but in the opposing camp were those who demurred and those who denounced.

"Why is it any better discipline to marry and adapt yourself to the demands of husband and children who love you, than to forego marriage, adapt yourself to the world from which you wring a livelihood, and battle besides with loneliness and a sense of failure?"

This question came from a hard-working professional woman who is supporting an invalid mother and helping a younger sister through college. It was worthy of respectful attention, and it inspired another woman present to give us the following illuminating bit of personal history:

"I was raised in the country," she said. "And when I graduated from the little district school, I had to drive three miles to the union high-school. My mother was an invalid, but in spite of the fact that most of her time was spent either in bed or on the livin-room couch, she had the largest and most varied asortment of friend of anyone in te country. During my grammar-school days, she had often invited my teacher—a frail little thing from a near-by city—to come home for week-ends. When I went to the high-school, where I had a different instructro for every subject, she had extended her hospitality to them all before the first period was over.

"I remember that my English teacher re during my fresmn year was a brilliant sad-eyed woman who rather antagonized our class by her ready sarcasm, although in every respect, I like her. I once complained to my mother of this one irritating trait. 'Don't be harsh in your judgment,' she urged, in her quiet nuderstanding way. 'She has had a sad life; enough trouble to have embittered her and broken her heart.' "

"At that time I did not think it strange that mother should have known all about Miss R—'s troubles. I accepted that as a matter of course People always told mother things. It is only in later years when I look back at that austere, reserved Boston woman that I marvel at my mother's genius for winning confidence.

"When I came away from home to take my first school, I entered into boarding-house life with all the thoughtless courage of the untried. To the commiseration and warnings which I heard all apout me as to 'the dreariness of it all. I turned an unheeding ear. Why must people be so gloomy about going out into the world? I wondered rather contemptuously. Of course it might be lonely at the very first, but after you got to know the mothers of your pupils—wh, I was going to be a live-wire teacher, and I'd have a host of friends in no time.

"In order to be a live wire, it is necessary to throw yourself heart and souul into your work, and for the first few months I was so absorbed in my profession that I had no time for social intercourse. Then came the gray days, when, work well in hand, I began to look for friends and recreation.

"I suppose my experience is the experience of most young women who have had to substitute a professional life for a domestic one. But to me the absolute exclusion from all home hospitality was praticularly hard because it was so unexpected. I had assumed that because my mother had thrown open her heart and home to so many women adrift in the world, that other mothers wouuld do the same for me. I had accepted as a natural law the universal motherhood theory.

"In six days I was invited twice into the homes of pupils, and the object of both my hostesses was to ask my as-my assistance in solving a problem concerning a child. It was after the latter of these calls that the real genius of my own mother disclosed itself to me in retrospect. She had always made our guests feel that it was for their own sakes she wished their friendship. She wanted to know them and give them something that had been temporarily taken out of their lives. Therein lay the radiant charm of her hospitality.

"During the six years of my teaching experience I have had several hundred children entrusted to my care and I have been just those two times into their homes. I have helped plan celebrations for mother's birthday. I have been chief advisor as to appropriate and inexpensive Christmas gifts. I have suggested programs for parties and evolved original games. And having done all this, I have suffered such aching lonliness that I have walked the streets in the evenings and looked into the windows. There was one house that I particularly remember, near the place where I boarded. It had a long, beautiful living room with a big, open fireplace and a pink-shaded lamp, and the people who lived in the house never pulled the shades all the way down.

"I am married now and have a home of my own, but I think it will take years of happy domestic life to soften the bitterness that I feel toward the selfish married people, who, snug and complacent in the love of husband and children, never spare a thought for the homeless and lonely. Sometimes I used to wish that I coulud get back at them in some way, to make them feel some of the loneliness that I have felt, but I have learned that the only revenge in life worth while is to save someone lese from the kind of pain that you yourself have suffered.'

It seemed to me that there was something very significant and vital about that little story. Many of us feel that as the heads of cheerful, happy homes, we are doing all that society could demand of us. A woman's first duty is, of course, to her husband and children. But after all, the little outside kindnesses and courtesies to those who are strangers and alone have some place in life. The world would be a sorry, dismal place if all of us simply did our duty to the home people, and nothing else.

This article is an appeal to the home woman not to leave up the shades of her living room, but to open a little wider the door. Hospitality is of two kinds; the latchkey kind and the latchstring kind. The former admits to our homes only those people with whom we have a common interest, the elect, to whom we have entrusted a key, and who are free to come in so long as they retain possession of it. The other kind admits anyone who has been sufficiently attracted to us to come up on the porch and pull the string.

The time is long past when gods masqueraded as men and there was an exciting possibility of sometimes entertaining an angel unawares. It's more than likely now htat our guests will always be 'just folks." But after all I like this condition best. It would be rather terrifying to discover that you had been entertaining an angel and angels could never value our efforts as much as some lonely woman who has learned in the hard school of life, the true worth of even the simplest hospitality which a real home offers her.

MEMORIES OF HOME

Dear to us still are the friendships formed during the period of our school life, and hard was the breaking of those ties, yet we cherish no such memories of our school mates as we do of home and mother.

If we have not already severed the ties of home, the time will come all

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to soon when the silken cord will be broken. This thought should make us enjoy all we can of life's sweet dream of childhood. If we are making preparations for a new home which the poetry of younth has painted with brilliant colors, we should not forget that the walls of our new home must be forever decorated with the picture of our old home. You may place the wide expanse of ocean between the two homes, but memory will paint the home of your childhood. We may lavish upon it all the rich accumulation of youth and manhood, but beside the costly paintings that adorn the parlor there hangs the picture of the old home. Do what you will it hangs there forever. It is a magic picture, you require no light to see it, you can see it better in the hushed stillness of the nigth than in the light of day. If the associations of that home have been unpleasant. If there is that picture, a mother who in the little room you used to occupy, sits weeping over your waywardness, with dark autographs of sorrow written across her brow; if there is a sister with a down cast look; a father sitting by the fireside with his head resting on his hands, prematurely old because you broke his heart; how will that picture haunt your guilty soul in the night, how will the sadness embitter every cup of joy, and turn to wormwood every pleasure? You cannot ask that father's forgiveness, it is too late. You cannot go to mother whose loving hand might perhaps put a veil over that hateful picture or hang in its place a more beautiful one. It is all too late, mother is gone. You can go to the old, the shed where you played with sister may be torn down and changed, everything is changed. But this will revive no pleasant memories, nothing but the sad day when you quarreled about picking apples, struck your little brother who is now sleeping in the garden with your mother. You can go there and call his name but he will not hear you, you may strew with flowers the graves of father and mother and brothers, you may erect costly stones, these will not atone. Do not wait for the sad day but while moher and father are alive, and your little brother is with you, make home happy and cheerful to all around. Keep mother's brow smooth, father's hair unsilvered. If you cannot make your father and mother truly happy and love them you canot make any heart happy. We should always try to make our home happy and greet every one with a smile. What we need is more sunshine in the home, more home influence with our boys and girls so that when they are taken aw aythere will be nothing but loving pleasant memories of Home.

Oh memory be sweet to me

Take, take all else at will
To thou but leave me safe and sound
Without a token my heart to wound
The little house on the hill.

Take all of best from east to west
To thou but leave me still
The chamber where in the starry light
I used to be awake at night
And list to the whip-poor-will.

But memory, be sweet to me
And build the wall at will
Of the chamber where I used to mark
So softly rippling over the dark
The song of the whip-poor-will.

Oh memory! be sweet to me
All other fountains chill;
But leave that song so weird and wild
Dear as its life to the heart of the child
In the little house on the hill.

GIRL'S RUSSIAN BLOUSE DRESS.

By Anabel Worthington.

One look at this design makes it clear to us why the fancy of fickle fashion is securely anchored in the Russian blouse. Truly it is a most satisfying style for the growing girl.

In the model illustrated the blouse slips on over the head, is loosely belted at a bit below normal waist line, with pockets in contrasting note clinging to the belt for novelty and to delight the wearer. The sleeve may be in three-quarter length and finished with a very lovely cuff, as pictured, or a long sleeve with its fulness gathered into a wristband cuff may be your choice.

The separate two gore skirt is of different material, but all one may be employed to advantage. Many mothers like a woollen weave for the skirt and linen for the blouse. Others use striped and plain material, as in the illustration, or reverse and make the blouse of striped, trimmed with plain material, and the skirt of plain ground goods. The detail touches are effective, but the lines of this model are so very simple that a girl who has been taught sewing in the schoolroom can copy the design without effort.

The pattern No. 8,153 cuts in sizes 8 to 14 years. To make in size 10 requires 1½ yards of 36 inch goods for the skirt and trimming of blouse, and 2¼ yards of 36 inch material for the rest of the dress.

To obtain the pattern send to the office of this publication.

LOOKING BACKWARD

One more year has drawn to a close but before we write "finis," let us spend a few minutes in retrospection.

We have had a busy twelve months, filled with many cares, troubles and anxieties. Our cares and anxieties, in so far as they were personally connected with the national conflict, have indeed been very real, but the most of our troubles we must admit have been imaginary, and many of the burdens have truly been of our own making.

To count our blessings we have only to remember Belgium. Though far-distant lands are hallowed with the bodies of our heroes, "God's acres" here are filled with loved ones gleaned from the ordinary walks of life.

We do not need to seek the battlefields for death, for with its accompanying sorrows it steals into our households in time of peace. For the aged death has no terror. For them it is as Bryant tells us, a mere drawing of the drapery of the couch about them and a lying down to pleasant dreams.

It is not death that should trouble us, but life. We have too much sorrow for the dead and not enough for the living. We are too prone to aid the sick-unto-death when they are past helping, and salve our conscience with wreaths and crosses.

In the heydey of life our needs are more urgent. As we glance beckward through the year, can we truthfully say that, with a spirit of Chistian grace, we have fileed the lives of those about us with cheer and happiness

Have we lived in harmony with our surrondings?

Have we scattered kind words, loving thoughts, and tender sympathy to all humanity along the year's journey?

Have we lived in harmony with our fellow-men, or have we sown discord with thoughtless, selfish words and acts, and put "sweet bells out of tune?"

Is the underlying motive in our charity and patriotic work a pure one or do we seek the praise of men for good deeds?

Are our hearts so deep in the cause that self is undermost?

In Institute affairs, have we been true and faithful to the work?

Have we given the proper support to our officials and generous, sympathetic aid to each other in alloted work

Has a spirit of contentment possessed us over our smaller portion, or have we grumbled and antagonized our associates?

Can we, as the infant year comes into being, step out anew and meeting ur fellw-creatures, eye to eye, say, in all sincerity, "Peace unto thee and thine?"

LET US TRY IT.

MEAT SUBSTITUTES

Mock Sausage.

½ c. beans, boiled and put through a sieve, 1-3 c. bread crumbs, 3 tbsp. butter, pepper, ¼ tsp. salt, ½ tsp. sage, 1 egg. Roll sausage in crumbs, egg and crumbs and fry.

Mock Hamburg Steak

1 c. chopped nuts, ½ c. milk, ½ tsp. salt, 1 c. bread crumbs, ¼ tsp. onion juice, pepper, 1 egg. Make mixture in small cakes and fry.

Vegetable Loaf

1 c. vegetable pulp, (peas or beans), 1½ c. crumbs, 1½ c. milk, 1 tsp. salt, 1 tsp. sugar, pepper, ¼ c. fat, 1 egg, onion. Mix all the ingredients together, place in baking pan and bake for 30 or 40 minutes.

Peanut Fondu

1 c. ground peanuts, 1 c. bread crumbs, 1 2-3 c. milk, 1 egg, 1 tsp. salt, cayenne. Add stiffly beaten egg white last and bake. Serve at once.

Kidney Bean Stew

1 c. beans, 1 small onion, 2 tbsp. rice, 2 c. stewed tomatoes, 2 tbsp. fat, 2 tbsp. flour, salt, pepper. Soak beans over night and cook until tender, add onion, rice and tomatoes and just before serving, melt fat add flour and seasonings and then bean mixture, cook a moment and serve.

Eat an apple a day—if you have them. They did better than that in the Garden of Eden. Some say Eve 8 and Adam 2, but it is more likely that Eve 8-- and Adam 81--2—a total of 893. Eat 1 anyway, but eat another 1-2 if you can.

Watch for rabbit work in the orchard and get the rabbit before he gets your trees. Tramp the snow well around each tree to discourage mice working under the crust.

Fashions Dept.

How to Order Patterns.

Order by number, giving age or measurement as required, and allowing at least ten days to receive pattern. Also state in which issue pattern appeared. If two numbers appear for the one suit, one for coat, the other for skirt, thirty cents must be sent. Address Fashion Department, "The Maritime Farmer, Sussex, N. B. Be sure to sign your name when ordering patterns. Many forget to do this.

Positively no patterns will be sold under 15 cents each, owing to advance in cost of same.

When ordering, please use this form:—

Send the following pattern to:

Name .....

Post Office.....

County .....

Province .....

Number of Pattern.....

Age (if child or misses' pattern).....

Measurement—Waist .....Bust.....

Date of issue in which pattern appeared. .....

BOY'S RUSSIAN SUIT.

By Anabel Worthington.

The Russian style, so long the favorite with mothers and with Fashion, continues triumphant among the models offered for the small boy. It is, of course, decidedly boyish and when made like the suit shown by this drawing is sure to create interest.

The blouse, cut with smart closing outline, has a neat round collar of the goods or of material in different weave and opposing color; full length sleeves are cuffed to match. At a lowered waistline the fulness is neatly drawn in with a patent leather belt or one of the material in the suit.

A pocket is a little thing, but when a boy of six years is concerned it looms very large, so it will be to advantage to add a pocket to the left side, using self material or contrasting goods, according to the fabric that contributes the collar and cuffs. Any little fellow will feel proud and grown up if straight trousers complete the suit.

In most cases this type of suit is developed in St. Nicholas cloth, gingham, linen or galatea, but one may choose wool mixtures, serge or like weave for a kindergarten suit. There is very little work to copying the design and no worry at all, for the pattern is in pictures for your convenience.

The suit pattern, No. 8.133. cuts in sizes, two, four and six years.

To make in the medium size requires two yards thirty-six inch material; one-quarter yard thirty-two inch contrasting goods.

To obtain the pattern send 10 cents to the office of this publication.

WHEN A COW GIVES HER GREATEST YIELD

The majority of people are under the impression that a cow gives her greatest production of milk a very few days after she drops her calf.

The good cow in the hands of an experienced feeder, however, doesn't reach her highest production until four or five weeks after she freshens. He watches her general conditions and gives her all the feed she needs to make the supply of milk she is producing. Then he adds a little to the ration and notes results. If she responds in the proportion of three to one, that is giving him three pounds of milk additional for every additional pound if meal that he gives her, he lets her have this larger feed for two or three days and then increases it a little more. He keeps telling her that as long as she makes good use of the additional feed, she can have it.

He is very careful, however, to watch her general health and appetite. He keeps her hungry for her meals and takes away her feed if she shows any disposition not to relish it. In addition to using the feed he gives her, she has nutriment stored on her carcass which she laid up during her rest period and makes good use of it for the first few weeks after freshening.

At the end of four or five weeks he gets her up to her highest production and from then on, it is just a case of holding her as nearly as possible to that high production without giving her too much ground feed. At all times he lets her understand that she must produce milk in proportion to the ground feed that he is giving her and as soon as she begins to fall off a little in the milk supply he cuts down on the amount of ground feed that he gives her.

He studies the cow as an individual because he knows that some cows do not need quite as much ground feed as others to produce given results.—Ex.

BUY YOUR PURE BRED POULTRY IN THE FALL

October is probably the best month of the whole year for starting with the pure bred poultry, or for adding to the purity of one's flock, if this process is to be accomplished by the purchase of fowls instead of chicks.

Breeders always have an abundance of breeding fowls, both males and females, for disposal in the fall, and are willing to let them go at comparatively low prices now in order to make room for the young birds they are raising and which are requiring more and more room with each passing weeek.

Therefroe, if you are contemplating the purchase of stock of any age, now is the time to go ahead and do it.

As a rule, more real progress can be made in a year's time by starting with a trio or pen of pure-bred fowls, rather than by buying two or three blooded roosters and mating these with twenty-five or thirty mongrel females. In the latter event it is true that more eggs can be set and if the plan is continued for several years all the birds will ultimately become uniform in type and color, but it will take many generations before all the mongrel blood is bred out, and the bad effects of a mixe foundation sometimes stays with a strain permanently.

If you buy a trio or a small pen of five to ten breeding fowls, the investment should not be excessive and a year or two of careful breeding ought to return you a fine, large flock of known ancestry and good points. In the meantime you could retain your mongrel stock to produce market eggs keeping your pure-breds in a flock by themselves and using all their eggs for hatching. The second season should give you enough pure-bred stock on hand to justify you in disposing of all scrubs and keep nothing but top notch specimens.—R. B. S.

THE GARDEN SOIL

The garden soil should be fertile. Vegetables are heavy feeders but they

The Pallor of Anaemia Calls for Reconstructive Treatment

ANAEMIA comes on so insidiously that you may not realize its presence until a look in your mirror discloses the pallor of the skin and of the gums, the lips and the eyelids.

You may be gaining in weight, but the flesh is soft and flabby, and you are laying on fat rather than muscle. You find yourself disinclined to exertion, and greatly fatigued by any effort. There is weakness, heart palpitation and a disturbance of the digestive system.

The failure of the organs of digestion to derive proper nutrition from the food you eat has reduced the number of red corpuscles in the blood. The blood has become thin and watery, and in spite of the food you eat you are literally starving to death.

As this process continues you must necessarily grow weaker and weaker, and the bodily organs become more and more incapable of performing their natural functions.

There can be no question that Dr. Chase's Nerve Food is the ideal treatment for anaemia or bloodlessness, because it supplies to the blood in condensed form the very elements from which new, rich blood is created. In this way it makes up for the deficiencies of the digestive system, and sets in motion the process of reconstructon.

As the blood improves in quality under this treatment the action of the heart is strengthened, circulation is better, appetite is sharpened, the digestive organs gradually resume their functions, and you gain in strength and vigor.

You will not use this food cure long before you realize the upbuilding influence on your system. With returning strength comes new hope and confidence. The discouraging days will disappear from your life, and you will feel again the joy of health.

The Food Cure

Miss Alice Howes, 21 Haddington Street, Galt, Ont., writes :—"I was very ill with anaemia, could not sleep at night, and my appetite seemed entirely gone. I suffered in this way for nearly three years, and had treatment from two doctors in Toronto, where I was living at the time, but did not get any relief. I became completely run down, and as I did not see any immediate hopes of getting better, I went back to live with my mother in Galt. I thought, perhaps, the change of air might do me good. My mother saw that I was in a bad state, because my nerves were affected, and everywhere I went I used to take dizzy and fainting spells. My hands and limbs would become numb, I would see black specks before my eyes, and cold perspiration would come out on me. My mother had been taking Dr. Chase's Nerve Food with excellent results, and she advised me to do the same. But it is hard for me to take pills, so I went to a doctor in Galt instead. However, his treatment did me no good, so I at last decided to follow my mother's advice. I began taking Dr. Chase's Nerve Food, and gradually found myself getting better. I soon was able to sleep at night without any difficulty, my appetite came back, and I began to gain back my natural color. After taking about twelve boxes of this medicine I was able to return to my work in Toronto. My friends there all noticed the improvement in my condition, and I am now stronger and healthier than I have been for a long, long time. I shall always recommend Dr. Chase's Nerve Food wherever I go, as I really think it is the best treatment obtainable for worn-out nerves and run-down system."

Dr. Chase's Nerve Food

50 cents a box, a full treatment of 6 boxes for $2.75, at all dealers, or Edmanson, Bates & Co., Limited, Toronto. Do not be talked into accepting a substitute. Imitations only disappoint.

IMPORTANT CHANGES IN TRAIN SCHEDULES

General Time Changes on Canadian Govern ent Railways on January 6th.

MARITIME EXPRESS WILL BE THE DAILY THROUGH TRAIN

Important changes in the train schedules of the Canadian Government Railways will go into effect on January 6th, 1918.

The Ocean Limited now running daily between Montreal and Halifax will after that date leave Montreal daily except Saturday at 6.40 p. m. instead of at 7.00 p. m., and arrive at Halifax daily except Sunday at 11.40 p. m. The Westbound Ocean Limited will leave Halifax daily except Sunday at 7.45 a. m. and arrive in Montreal at 9.45 a. m. daily except Monday.

Teh Maritime Express will be the daily through train, leaving Montreal at 9.25 a. m. and arriving at Halifax at 4.00 p. m., and leaving Halifax westbound at 3.00 p. m. and arriving in Montreal at 7.40 p. m. It will be seen that theschedules of both trains have been lengthened slightly so as to give a little more running time during the period of difficult operating conditions.

The new time table will ont greatly affect the local train service, and but few changes are predicted in the branch lines, excepting to alter the schedules of connecting trains with the through express.

The service between Prince Edward Island and the mainland is now via Cape Tormentine, and on and after December 31st the car ferry "Prince Edward Island" will leave Port Borden, P. E. I., after the arrival of the morning express trains from Charottetown and Summerside, and arrive at Cape Tormentine to connect with a train leaving there at 10.30 a. m. and arriving at Sackville at 12.05 noon; connecting there with the Ocean Limited westbound, and with No. 18 express for Truro. Theafternoon passenger train to connect with the steamer will leave Sackville at 1.00 p. m. arriving at Cape Tormentine at 2.30 p m. affording a connection for passengers for the Island on trains No. 199, 4, and 18.

The changes of January 6th will also bring about the start of a direct passenger service between Quebec and Montreal via the new Quebec bridge. The local express train No. 45 and 46 will perform this service for the present, No. 45 leaving Quebec at 3.45 p. m. and arriving in Montreal at 10 25 p. m. daily except Sunday. No. 46 will leave Montreal at 7.15 a.m. and arrive in Quebec at 1.55 p. m. These trains will run in and out of Palais Station. The daiyl express trains between Edmundston and Levis will henceforth run in and out of Quebec via Diamond Junction and the Bridge and will not touch at Lefis. The Ocean Limited and the Maritime Express will continue to make their regular stops at Levis and the Quebec connection with these trains will be by the ferry as usual.

This Book will help you
Stop the Leaks
in your Farm Profits
WHAT THE FARMER CAN DO WITH CONCRETE
WE'VE called it "What the Farmer can do with Concrete"—a title that exactly describes it, but does not give any idea of how vital its help is to you. To realize this you've got to understand that Concrete is a big factor in successful farming. Just consider the common leaks your farm is subject to, and how Concrete stops those leaks
Wooden Buildings rot under the stress of time and weather. Repairs cost money Concrete won't rot.
Rats are another source of leakage—they gnaw their way through all kinds of buildings—except Concrete, which is rat proof.
Fire on a farm usually means total loss because of the lack of water-pressure. Concrete cannot burn—another leak stopped.
Disease among your stock is usually due to unsanitary conditions. These conditions can be entirely remedied by building the wells, water tanks, septic tanks and barn floors of Concrete.
There's a type of waste that is peculiar to the farm that is built of old-style materials. For instance, mud was never intended for the paving of a feeding lot. Build your feeding floor of Concrete, and there will not be a single kernel lost.
Signify what you want information about
FLOORS
DAIRY HOUSES
CONCRETE BLOCKS
BARNS
SILOS
FENCE POSTS
GARAGES
ROOT CELLARS
TROUGHS AND TANKS
ROADS
"What the Farmer can do with concrete"
Do you need this book that makes it easy for you to improve your farm?
This Book is FREE
Write for it.
Canada Cement Company, Limited
117 HERALD BLDG., MONTREAL
On Concrete Roads
there is low haulage cost and free access for all types of vehicle—any hour, any day, any season. You are surely using Concrete on your farm—you find it makes for true economy, because it never needs repairs. The same notable feature of concrete makes it the only practical material for economical road-building.
Only by having Permanent Highways of Concrete can the farmer run his motor car or drive his team where and when he please—in quick time and in all weather.

will return many times over the value of the manure used in building up the soil. Barnyard manure is the best general fertilizer to use, both for its plant food value and for its tendency to lighten up tight and clayey soils which drain poorly and remain "cold" until late in the spring. The loose, mellow soil resulting from application of barnyard manure is also essential in growing the root crops, which are likely to be misshapen and istorted in too light and stony soils. oot crops are more easily harvested inn a mellow soil, too. A dressing of three inches of manure is not too much, but it should be well rotted if it is plowed under in the spring.

Garedns that were plowed this fall will show the good effectts of weathering and a reduced number of grubs and other pests that have escaped freezing, as well as the opportunity for rotting o fte manure through the winter. If your garden was not plowed this fall, it should be done as early as the ground is at all fit to work in the psring.

CLEANING GRAIN FOR SEED

In using a fanning mill one must be governed by the condition of the grain he is cleaning. As the different grains have different weights per bushel it is necessary not only to use different sized screens, but also to regulate the wind, shake and speed of the mill to suit the different weights and sizes of grain to be cleaned. The fanning mill will only separate grains or seeds of different sizes or weights. The wind is one of the most important factors. The first thing to do is to examine the grain thoroughly see what other grains, weeds, seeds, etc., there are in it, and make up on's mind as to the best way to clean them out.

In cleaning oats for seed, regulate the machine according to directions on the mill. The first operation consists of blowing out all the chaff. Most of the very small seeds will go through the screen under the hopper, but a certain amount will go through the screen in the lower shoe. To make a perfect job and to get all the larger weed seeds, such as vetches, cockle, wild buckwheat, or even wheat and barley that are not the same size and weight as oats, the grain must be put through once or twice more.

The second cleaning requires quite a different operation. The riddles are to be arranged as for cleaning wheat, and anything of the size and length of wheat should go through the riddles, and the large, long, heavy oats should go over the back of the machine. Care must be taken to see that the proper slant is on the riddles so as to carry the oats over, and all the other grain, etc., down under the mill. In regulating the wind and shake, use very little wind, as you do not want to blow any of the light seeds or small wheat or barley over with the oats; and have very little shake, so that the oatst will not be stood on end and go through, but slide over the back of the machin.

In cleaning wheat for seed, after the chaff and small seeds are all removed take out one or two of the wheat riddles, and open all the wind doors wide. Good, plump wheat, weighing 60 pounds per bushel and over, will take more wind than the average fanning supply. The good, heavy grain cannot be blown over, but all the lighter grains, also oats and barley, ought to find their way over the back of the machine. Care must be taken to use conductors to carry the grain near enough the back of the machine to give the wind a chance. When there is still some small grain or seeds left, it may be sometimes necessary to run the grain through twice. Should white caps in wheat (wheat hulls) be found troublesome to remove, select one of the long screens belonging to the lower shoe—just large enough to let the wheat through—place the screen directly under the hopper, and this will extend far enough back to carry the white caps out over the machine. This long screen will also be found most useful when cleaning oats, whenever there are thistle tops or joints of oat straw amongst the grain.

Man experiments have proven that careful fanning pays many times over for the trouble in cleaning the seed grain. You have pure, clean seed, free from weeds, and the longer and plumper seed produces heavier crops.

THE CUMBERLAND COUNTY POULTRY AND PET STOCK SHOW

The Cumberland County Poultry and Pet Stock Association's first annual show was a success from the word go. This Association was only organized last February and has accomplished great work in that length of time. Their first show opened up on Tuesday, Nov. 27th, with an entry of nearly four hundred birds and good competition in every class. One of the strongest points of the show was that the night previous to the opening of the show every bird was in the building and cooped, and all exhibits were in and completed so that when the doors were opened the show was in readiness.

It was opened on Tuesday night by Amherst Boy Scout Band who rendered an excellen programme. The judging was done by Mr. J. P. Landry of Truro, N. S., who commended the show very highly on the quality of birds exhibited. The following were patrons during the show: Lieut.-Governor Grant, Halifax; His Worship Moyor Pipes; R. I. Black, President Board of Trade; F. C. Elford, Dominion Poultry Husbandryman; F. L. Fuller, Sect'y Maratime Stock Breeder's Association; and all commended the officers highly on the excellent exhibit and way in which the show was carried off.

Mr. R. R. Black, Oxford Junction, was the heaviest exhibitor and won a large share of the prizes. He also won the silver cup donated b the Cumberland Poultry Association. Mr. E. E. Peel, Amherst, carried off the Hon. E. N. Rhodes' Cup for best showing of White Leghorns. Mr. Peel also had an interesting exhibit of hares which were judged by V. G. Fuller, Amherst, on which he won many prizes.

In every way the show was a great success and great credit is due Mr. C. B. Chipman, President; Mr. W. W. Baird, Supt.; and Mr. V. G. Fuller, Secretary for the excellent way in which they handled the show. They are pleased to report that the balance is on the right side.

THE FEEDING AND HOUSING OF SWINE

On account of the high value of concentrated foods suitable for swine feeding, it is important that the foods that are used be so combined as to produce the maximum of results. The question of housing also enters largely into the profitable production of pork. To encourage farmers to raise as many hogs as possible, and to make the most money therfrom, the Department of Agriculture, Ottawa, deals also with the questions of breeding and care of the animals at different ages and at different seasons of the year. This pamphlet is prepared by Professor G. E. Day, in charge of the Bacon Production Campaign, Dominion Department of Agriculture, Mr. E. S. Archibald, Dominion Husbandman, and his Assistant, Mr. G. B. Rothwell.

Mr. Archibald, after much experimental work, lays down the principal that an expensive piggery is unnecessary. Brood sows may be kept under most circumstances even in the winter season in a single board hog cabin. This pamphlet gives specifications and plans, not only of a large piggery, but of a cheap and portable cabin.

RIGHT WAY TO HANG LANTERN IN STABLE

Most farmers know of fires that have started around farm buildings from te overturning of lanterns. We usuall set a lantern down by the side of the barn door while we do the barn work and take a chance. Or maybe we are a little more careful and hang it on a nail.

In a few barns and stables I notice a wire stretched across the rear of the stables. On this farm every once in a while there is a wire hook fastened around the wire and with a hook in the lower end of the lantern bail or handle. Some of trese mey be short and some longer. I have one about a foot long while two others on the same wire are two or three inches.

With the lantern on these hooks, even if some of the stock bump into it, the lantern cannot get loose but will just swing around out of the way. Besides that the hooks will slide along on the wire so that the light is just where you want it no matter what stall you may be working in.

I use number eight wire for this as it holds up better and the hooks are stronger with this size. Some farmerse I notice use a regular harness snap for the lantern to fasten into. This might be better though I do not see how the lantern handle could well get out of either one of them.—Farmer John.

IT PAYS TO TREAT FENCE POSTS

Experiments conducted by the forestry department of the Colorado Agriculutural College, indicate that cheap, shortlived timber such as lodgepole pine, Engleman spruce, balsam, fir and cottonwood or poplar can be made to last enough longer by a simple treatment with some timber preservative, to make it worth while. The best preservative for this purpose is a good grade of coal tar creosote used by the open tank method. Any tank or large can of sheet or galvanized iron, which will permit of heating the lipuid to the boiling point and is deep enough to allow the posts to be dipped to a depth of 30 inches will do.

Posts to be treated should be well seasoned and may be left in the hot creosote for from 10 to 30 minutes, for a short treatment, or from one to two hours for a thorough treatment.

If the posts are allowed to stand in the creosote while it is cooling a much deeper penetration will be secured while, at the same time, the cost per post is increased. The lasting qualities of the post are increased with the deeper penetration of the preservative.

The chepest material tried was ordinary gas tar which has increased the life of treated posts thus far, at least 50 per cent., although it does not penetrate readily. Further time is required to learn its fullest effectiveness from our experiments.—B. O. Longyear.

HUMUS IN THE SOIL

Humus is the decayed and decaying organic matter in the soil. Next to soil moisture, humus is the most important factor in determining the yield of any crop, and it might be placed first, because the capacity of the soil to absorb and hold moisture is directly proportional to its humus content.

Humus adds plant food and makes plant food available. It supplies media in which the soil bacteria live and multiply, causing chemical changes in the soil which make the plant food elements soluble and available to plant roots. It enlivens the soil, giving good tilth and a texture favorable to soil aeration, and to the absorption and holding of soil moisture. It loosens heavy soils and holds sandy soils together, lessens packing and prevents to a large degree soil washing and blowing. It gives the soil its dark rich color, and makes it warmer because the dark color favors the absorption of heat. A soil without humus is a "dead" soil, infertile and barren; in fact, "humus is the basis of soil fertility and a complete soil builder."

Any worm that eats the foilage of trees or plants of any kind can be poisoned by a spray of arsenate of lead. Arsenate of lead is better than paris green because it is not washed off by heavy rains.

50 Acre Farm $1750

Sell cream at door, feed skim to hogs; 200 bbls apples last year; estima ed 500 cords wood; good 10-room bouse; 60 ft. barn and 3 poultry houses for 500 hens; if taken soon retiring owner will include horse, cow and some hay, stove wood and farm tools; $1750 for everything, part down; see page 3 Strout's Catalogue of 321 bargains, copy mailed free. E. A. STROUT FARM AGENCY. Dept. 2612, 294 Washington St., Boston, Mass.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up. Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B.

Ayrshire Cattle

C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

Shorthorn Cattle.

Walter E. Eaton, Upper Cunard, Kings Co., N.S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma, Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

FOR SALE

A pen of 8 S.C. White Leghorn Layers 6 pullets and 2 yearlings, of a trap-nested bred-to-lay strain. Price $15.00. Barred Rock, White Wyandotte, and S.C.R.I. Red Cockerels; fine large birds of good type and color, from strains that are bred for quality and egg production, $3.00 each. Only a few left. Write for further particulars, or order direct from this advertisement.

H. M. Mc MONAGLE, Fredericton, N. B.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.

FOR SALE

A handsome, well-grown Guernsey bull. Sire purchased from the Experimental Farm, Ottawa; dam of equally good breeding, and a heavy producer. Will be sold reasonable. Full particulars on inquiry.

SARAH E. MOSES SMITH,
Woodwards Cove, - - - N. B.

Fir Shade Farm Dual-Purpose Shorthorns !

Several years ago I imported from Ontario three Dual-Purpose Shorthorn animals, and now have in my stable at Rothesay eight representatives of this breed. Two of the females are entered in the Record of Performance, and so far bave done excellent work. If you feel disposed you might drop in and see these the first time you are in the vicinity. Perhaps some time when you are coming to the city you would let me know, when I could arrange to go to Rothesay with you.

P. R. L. FAIRWEATHER. St. John, N. B.

FOR SALE !

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Volume 23. SUSSEX, NEW BRUNSWICK, JANUARY 22, 1918. Number 8.

Common Ailments and Diseases of Dairy Cattle

Like all living creatures, the dairy animal is not always in perfect health. Since dairy cattle now live under rather artificial conditions they are no doubt afflicted by more ailments than if living under entirely natural conditions. The old saying "Prevention is better than cure" admits of no more proper application than in the dairy business. Therefore, the aim of all dairymen should be to give that care and attention that will ward off disease, than to depend on his own skill or that of his veterinarian to avoid serious loss from this source. Though the most stringent care cannot always prevent diseases from creeping in, the following of the simple rules of ventilation and cleanliness, the supply of abundance of good food, admission of sunlight and periodic disinfection of stables, will prevent most of the losses that occur in dairy stables from disease.

A discussion of some of the commoner afflictions of cattle that yield to treatment by the farmer, together with causes, prevention and cure, here follows:—

Abortion.—This disease is of two distinct kinds, mechanical or accidental abortion, caused by a fall, a blow, or a hook from another cow, and contagious abortion, due to the presence of a germ in the genital organs of the pregnant cow. The first kind only occasionally happens, and can be avoided only by care in handling the cows to avoid accidents of this kind. The second kind is the scourge of the dairy business. The germ of this disease has extraordinary vitality, which enables it to remain active in the system of the cow from one pregnancy to another, and great power of resistance, which enables it to survive medicinal treatment that does not have actual contact with the germ itself. Because the germ lies in the womb, which is tightly closed except for a few days after calving, it is, of course, impossible to bring the germ in direct contact with disinfectants for the greater part of the year. Therefore, there has not yet been found any course of medicinal treatment to which the disease has appreciably yielded.

The disease usually finds its way into the stable through the medium of a purchased cow that is infected, or a bull that has served an affected cow passing on the infection of healthy cows. The most obvious method of prevention is to avoid the introduction into the herd of either males or females from herds that are infected, and to prohibit the service of outside cows by the herd bull. Should the disease once get a foothold in the herd, the spread of the disease to all the cows is always very rapid, and even with the strictest treatment will take some years to entirely eradicate. There are the best grounds for belief that a cow may carry the affection and yet not abort, being of sufficient resisting power to prevent the disease from operating. It is also believed that when a cow becomes normal, after aborting one or more times, that she still retains in her system the infection, that may be transmitted to other animals. The latest investigation into the disease points to the probability of a heifer calf, born normally from a cow of either of the above kinds, carrying the infection in her system until she herself is of breeding age, when she may abort. The same investigations show that it is possible for a healthy heifer calf to become infected from the milk of an infected cow, and carry the infection until it causes her to abort at the first opportunity. These may explain the lack of success in eradicating the disease that has so far attended the strict methods of isolation, sanitation and disinfection heretofore practised by many dairymen. This would also partially explain the progress of the disease, through practically all badly infected herds; that is, that the infected cows seem to become immune after two or three years, and ensuing outbreaks are usually among heifers and purchased cows.

The only methods of handling an infected herd are isolation of aborting, or about to abort, cows from the rest of the herd, disinfection of stalls and gutters about the infected animals, and burning or burying all discharges and bedding from aborted cows. Added to these is the necessity of flushing of the vagina and washing of the exterior genitals, tail and thighs with an antiseptic solution till all discharges cease. The sheath of the bull should be cleansed with an antiseptic after each service. The best disinfectant for internal work is a three per cent. solution of carbolic acid, phenol or chloral naptholeum, or a ten per cent. solution of boracic acid, which has the advantage of not being so harsh as to cause severe straining, which sometimes is the result from the first mentioned disinfectants. For external use and disinfection of stalls and gutters, etc., a solution of carbolic acid, enoleum, or any other like coal tar product, double the strength mentioned above. For use in disinfecting the stables a two per cent. solution of corrosive-sublimate will also be found very efficient.

One of the frequent results of abortion is temporary loss of the breeding powers of the female. Good feeding and frequent flushing of the vagina, to expedite the healing of the organs after abortion, is the best treatment for this condition.

Just before going to press the Health of Animals Branch of the Dominion Department of Agriculture have issued the following statement regarding experimental work with this disease:—

The experiments which we have been making in the Health of Animals Branch of the Department of Agriculture, with the object of finding a means of controlling contagious abortion in cattle, have resulted hitherto successfully, and I am permitted by the Minister, the Honorable Martin Burrell, to make them public.

Experiment 1. Four heifers, aged 1 year, were inoculated with our protective vaccine January 26th, 1915. The test of the blood of these heifers showed that one of them was already infected with the bacillus of contagious abortion, and all four were living in a herd in which the disease was known to exist.

The four heifers were bred on the following dates: April 21st, April 23rd, April 23rd, and December 18th, 1915. They all calved, the dates being respectively January 26th, January 26th, January 12th, and September 11th, 1916.

Experiment 2. Ten yearling heifers were inoculated March 20th, 1915, four of which reacted to the test for contagious abortion. They were bred after an interval of three months. (Accurate dates cannot be given in this case, as the herd records were destroyed by fire). All became pregnant; eight carried their calves to full term and produced living offspring; two aborted.

Serum and Vaccine

Experiment 3. Four heifers, yearlings, were employed to test a method of employing a serum as well as a vaccine. With the first two, the serum and vaccine were used simultaneously; with the second two, the serum was given ten days prior to the vaccine. When tested, the first two had reacted to the test; the second two did not react. The first two were bred December 16th, 1915, and August 25th, 1915, and both aborted—July 12th, 1916 and April 16th, 1916. The second two were bred December 23rd, 1915, and November 9th, 1915, and produced living calves September 20th, 1916, and August 5th, 1916. This experiment was unsatisfactory and gave conflicting results, but shows that the simultaneous method of giving serum and vaccine did not prevent infected heifers from aborting.

Experiment 4. In this experiment an effort was made to find out how far the vaccine treatment would prevent abortion in cows which had previously aborted.

Eight cows were selected, ranging from two to seven years in age. All had previously aborted, one of them three times, the others once. All but one reacted to the test for contagious abortion. None were pregnant when inoculated nor bred afterwards until some weeks had elapsed. The result showed six cows produced living calves at full term; and one proved to be barren and was slaughtered; and one cow reacted when the herd was tested with tuberculin and was slaughtered, having previously aborted.

The method used in this experiment was a double inoculation with a mild vaccine first, followed by a strong vaccine several days later.

Experiment 5. Four cows, aged two to seven years, and four yearling heifers were used. The cows had all aborted previously, one of them twice, the others once. Three of them reacted to the test for contagious abortion. All were treated by the double method, and were bred, after a suitable interval, with the following result: One of the cows, the one that had aborted twice previously, aborted again. All the others produced living calves.

Should Make Application.

These experiments have resulted in obtaining 27 living calves from 34 cows and heifers in badly infected herds. This encourages us to hope that we have a really useful method of procuring immunity to the disease, and we are anxious to enlarge our experience by extending our work to other herds.

With this object we now offer to treat free of charge a limited number of herds in which contagious abortion is present. Owners are requested to make application in writing to the Veterinary Director General, Ottawa, stating the number of breeding females in the herd.

Applications will be dealt with in the order of their receipt.

F. TORRANCE,
Veterinary Director General.

Bloat.—This ailment is caused usually by a too heavy feed of damp green feed, such as red clover, corn, or rape. The best preventive is to have animals partially satisfied before turning on to such feeds as above, or to drive the animals out before they have had a chance to gorge. In moderate cases a dose of two tablespoons of turpentine in a pint of raw linseed oil will work a speedy recovery. If the case is severe, immediate tapping with a trocar and cannula at a point equi-distant from the hook point, loin edge and last rib on the left side. This should be followed by the dose of turpentine and raw oil mentioned above, and light feeding for three successive days. Tying a short piece of fork or broom handle crosswise in the animal's mouth has also been found to give quick relief.

Blind Teats.—This trouble arises from different causes, but is usually the result of a growth in the milk channel, following an attack of mammitis or garget. It is sometimes caused from a deep wound such as a barb wire cut. Should the trouble commence while the cow is in full milk, little can be done except to milk with a milk tube, kept clean and sterilised, and when the cow goes dry the growth can be partially removed with a teat bistuory. This operation should be performed only by a competent veterinarian.

Bloody Milk.—An injury to one or more quarters of the udder, or an attack of garget, are the usual causes of this ailment. Frequent milking of the affected quarter, and bathing with hot water twice daily, usually effects a

cure.

Cow Pox.—This is a common trouble during the spring when cows are first turned out to pasture, and is usually spread from cow to cow by the hands of the milker. The use of zinc oxide, carbolic salve, or even vaseline and sulphur, after each milking, is the best treatment. When the disease first appears, the affected cow should be milked last to avoid spreading to other animals.

Foul in the Foot.—Sometimes from the presence of dirt between the toes, the animal's foot will become swollen and sore. The foot should then be scraped and washed clean, with a disinfectant, every day, and the foot kept wrapped in a sack containing a gallon of moist bran.

Garget or Mammitis—Garget is well known to all dairymen. The natural swelling of the udder at calving time must not be confused with this disease, which may occur at any time in the milking period. Caked udder is another common name for the trouble. The usual cause is a chill due to cold in the udder brought on by draft or by contact of the udder with the cold damp floor or ground. If taken at the beginning, a cure is usually effected by keeping the cow in a warm dry place and dosing her with Epsom salts, or raw oil. Frequent massaging of the quarter, followed by rubbing with sweet oil, castor oil, or lard, is also to be advised. Should the case become severe, fomentations with hot water three times a day will be necessary. The udder must then be rubbed perfectly dry and camphorated oil rubbed in. This is rather severe treatment, and may cause the temporary drying up of the quarter. The worst cases may require the use of a hot pouultice of flaxseed, bran, or hot wet rags.. The disease, or at least one form of it, is contagious, so that in all cases the milk or fluid from the affected uudder should be drawn into a separate pail and destroyed, and the uudder disinfected externally with a five per cent. solution of carbolic acid.

Inversion of the Womb or Casting of the Withers.—The above words describe the condition where the womb, of calf bed, appears in a large mass, inside out, on the outside of the cow's body. It usually follows a difficult calving, and denotes a breaking or tearing of the ligaments that hold the uterus in its proper place in the body. When a cow has once had this trouble, it is liable to occur again after every succeeding calving. The operation of returning the uterus is a difficult one. To overcome the straining of the cow, tie a quarter-inch rope tightly around the body just back of the shoulder, and another just forward of the hooks. The uterus should then be washed off with clean cold water, with a very small trace of disinfectant. Then the mass can be slowly and carefully forced back into place with the closed fist. An occasional dash of cold water over the parts will reduce the size by driving out part of the blood. To hold the uterus in place after being returned, the lips of the vulva should be stitched for a couple of days. Or, after placing a tight surcingle around the cow's chest, two small ropes may be brought from it over the cow's back, on each side of the tail, crossed or knotted just under the tail and brought down, one on each side of the udder next to thighs, and tied tightly to the surcingle under the chest. Then the cow's hind feet should be raised six inches higher than her fore feet, for about a week.. If cows, heavy in calf, acquire the habit of standing back in a deep gutter, the gutter had better be filled up level to avoid bringing on this trouuble.

Lice.—These pests are difficult to eradicate in a stable. Tney often have a good foothold before they are noticed, particularly on animals with long, thick hair. They show their presence by the unthrifty dry appearance of the coat and loosening of patches of hair. Two good washings of the whole animal, with a five per cent. solution of Creolin, Zenoleum, or crude carbolic acid, about ten days apart, will kill most of them. Dusting the roots of the hair thoroughly with a mixture of hellebore and dry cement is also efficacious. If the hair is very long and thick, it will often pay to clip the animal before treating.

Lump Jaw.—This is a hard growth or swelling close to the bone of the lower jaw. As it is very infectious the animal should be isolated from the other cows before the swelling bursts. The only known remedy is a dose of two drams of iodide of potash in half a pint of water given every day foi seven days. If the swelling does not reduce in that time, repeat the dose. In the case of a valuable animal, treatment may be worth while.. An ordinary one might better be slaughtered as soon as the disease is noticed, as the meat can then be used. It is contrary to law to sell meat from an animal in the advanced stages of the disease.

Milk Fever.—Parturient apoplexy is another name for the same disease. This trouble affects only heavy milking cows within a few days after calving. It never attacks a heifer at her first calving, and rarely is it found if the calf is allowed to run with the cow for the first week. It rarely attacks a cow whose bowels are in a laxative condition and which is being lightly fed on laxative foods and if the cow is not milked out clean during the first three days the disease seldom occurs.

The symptoms are: loss of appetite, uneasiness, and partial paralysis of the limbs, or inability to rise or walk. Soon the cow goes down in an unconscious or semi-conscious condition. As the cow has difficulty in swallowing, she should never be drenched while in this condition, as all or part of the liquid may flow into the lungs and cause almost certain death. Of late, the disease has been found to yield readily to the air treatment. This consists in pumping the quarters full of air and confining the air by tying the teats tightly with tape. This may be done with a bicycle pump, or a rubber atomiser bulb, attached by a piece of rubber tubing to a milking tube, or by the use of a special milk fever outfit of much the same nature, in which the air has to pass through a chamber filled with medicated cotton. The teats should first be partly milked out, then washed off. The tube to be inserted should also be clean and sterilized. Air may be pumped into each teat till well distended, then the teat should be tied with a tape to prevent its escape. One injection will usually be found sufficient, but it may be repeated if necessary.

Paralysis of the Bowel.—This disease sometimes attacks cows during the first few days they are turned out to pasture. It is supposedly caused by lying on the damp cold ground. The cow refuses to eat anything, though she shows no pain at first, and gradually becomes weaker and weaker through lack of feed. In three or four daays she will go down, will be unable to rise, and in a day or two will usually die in great agony. Unless taken at its inception, the disease is fatal. Strong stimulants, such as nux vomica, sulphate of iron, and bichromate of potash administered by a veterinary will sometimes work a cure at this stage.

Pneumonia.—Inflammation of the lungs, as it is commonly called, attacks cattle only in cold weather. The symptoms are lack of appetite and ambition, rapid breathing and a crackling sound in the lungs, heard when the ear is applied to the chest. The disease is usually ushered in with a severe cold, followed by high fever. A veterinarian had better be called in, and the animal placed in a dry stall, not necessarily too warm, but free from draughts. The animal is not likely to eat, but she may take a bran mash of boiled potatoes. The medicine given should consist of a pint of raw linseed oil at the beginning, followed every three hours by a quart of thin flaxseed gruel and two ounces of whiskey. A good strong mustard blister over the lung, left on two hours, will help relieve the pain. The animal should be kept blanketed and free from draughts till fully recovered.

Retention of the Afterbirth.—The cause of this disease has never yet been ascertained. It attacks calving cows in all the varying stages of bodily condition, age, and breeding, at all times of the year, and in all weather. It is found after most cases of abortion or abnromal births. If the afterbirth does not come away within twelve hours after calving it will not come away naturally. To avoid the poisoning of the system by the decay of the tissues of the afterbirth in the womb, it is necessary to remove them. This should be done by at least the third day after calving. After providing himself with a pail of warm water, in which is a disinfectant, the operator should strip to the waist, wash his hands and arms in the water, and coat them with some oil, vaseline, or lard. The arm should then be inserted in the vagina, and the hand follow up the plaacenta into the womb until the first attachment is reached. This is a bulbous button-like projection, or cotyledon, from which the placenta can be separated by the finger and thumb. Follow up the placenta until the tissues are all removed from the cotyledons, at all times exercising a steady pull on the end of the placenta hanging from the cow. This is a hard, tedious operation, but should be done with as little roughness as possible, to avoid bleeding at the cotyledons. After removal of all parts of the afterbirth, the uterus must be flushed out with a gallon of warm antiseptic solution. For this purpose a solution of boracic acid is advised as it is not so harsh and causes less straining. A milk solution of carbolic acid, about two per cent., will also be efficient. If there is any discharge, a second flushing out inside of forty-eight hours is to be advised.

Ringworm.—This is a fungus growth more often found on calves than on mature animals. Treatment consists in painting with iodine, or a couple of applications of sugar of lead and cream, one to four parts by weight. Kerosene oil will often work a cure, but leaves the surface raw, and retards the growth of the new hair.

Tuberculosis.—This disease is much more common in our Ontario herds than is usually supposed. This is due to the fact that animals well fed and cared for do not show any outward indications of the disease, until the disease has reached the well developed stage. There is no known cure for the disease, and treatment consists only in preventing its spread to healthy animals. The presence of the disease is indicated only by the application of the tuberculin test. Every farmer would be wise to test all his cattle at least once a year. If only a few animals react, they should be disposed of to avoid infecting the balance of the herd. In its first and middle stages the disease does not usually affect the sale of the meat. If quite a number react, so that immediate disposal would cause a severe loss, all possible means should be taken to isolate the reacting ones from the healthy cows, both in the stable and in the pasture. The calves from diseased cows are always born healthy, and, if removed at birth from contact with the mothers, and fed only the milk from healthy cows, they will be as free from the disease as calves from dams thata have no tuberculosis.

Warbles.—These lumps, that develop on the backs of cattle, just under the skin, are the larvae or grubs of a bot fly that lays its eggs the previous summer. Turpentine, or a mixture of one part sulphur to two parts lard, smeared on the lumps will kill the grubs as soon as they make an opening in the skin. Large warbles can be squeezed out by hand, and destroyed.

White Scours in Calves.—This is an infectious disease attacking young cows. Though due to the presence of a germ in the digestive tract, it rarely occurs where proper cleanly methods of feeding are practised. The symptoms of the disease are loss of appetite and energy, slight bloating, and an offensive white color to the manure. An immediate purgative of two ounces of castor oil is necessary, and the feed should consist of warm whole milk till the trouble abates. Many dairymen report good success from feeding in the milk a couple of tablespoonfuls of a mixture of one half ounce formalin in twelve ounces of water. Cleanliness and regularity in feeding, however, will always avoid trouble of this kind.

The Medicine Chest

The foregoing discussion on the treatment of diseases demonstrates that most of the common ailments can be successfully treated if the farmer has on hand a few of the simple remedies that are recommended for use in this connection. Every stable should be supplied with the following drugs, kept in a locked cupboard, each separate kind being distinctly labeled to avoid mistakes.

Purgatives and Laxatives

10 lbs. Epsom Salts. 1 lb. Ginger. 1 gal. raw linseed oil. 1 quart castor oil.

Applications to udders and teats

½ pint olive oil. 1 lb. lard. 1 pint camphorated oil. 1 lb. vaseline.

Bloating

1 pint of turpentine.

Disinfectants

1 lb. carbolic acid. 1 lb. boracic acid. 1 gal. Zenoleum, Creolin or Chloral Naptholeum.

Tonics and Stimulants.

½ lb. Sulphate of Iron. ½ lb. Gentian. 1 pint whiskey or brandy.

For Dehorning Calves

½ doz. sticks Caustic Potash.

In addition to the above, the following appliances for treatment of diseases and the administration of medicines can profitably be included:

Drenching bottle with long neck. Trocar and Cannula, for bloating. Graduated measuring glass. Milk fever apparatus. Clinical thermometer. Inejction pump, of 6 ft. half-in. rubber hose with glass funnel. Hard rubber syringe. 3 milking tubes. Set of hand clippers.

LICE AND WORMS LESSEN PORK PROFITS

Lice are the sure enemy to profits on the hog at all seasons of the year. They crawl over the body and bite him after night till he cannot sleep. They scurry through his bristles by day till he cannot forage his living. The bite is poisonous and gradually saps away the vitality of the most thrifty looking shoat in the face of heavy fceding. This poison acts upon the nervous system of the hog just as it would on a human being and he becomes nervous and irritable. A good hog oiler with a good supply of oil will kill the lice and mites and soothe that itching irritation that destroys all the foundation for prolts.

Worms are another source of great loss in the hog lots. There are several commercial worm killers on the market, but there is a cheaper remedy if we will only use it. A little turpentine mixed with a good bucket of slop once a week will clean out the worms in great shape. Just a teaspoonful or two will do the work—just enough so the hog will not go back on drinking the liquid to the last drop. Lice and worms are two very unproltable factors in th ehog lot and the two together we suspect have caused more cholera scares than all the other things put together. They undermine the constitution and so weaken it that the animal falls an easy prey to whatever riseases comes along.

OLIVER HECK.

N. S. Dairymen's Annual

Splendid Meeting of the Butter Producers--Large Increase in the Production of 1917--More Yet to be Done.

The annual meeting of the Nova Scotia Dairymen's Association was held at Truro on January 10th and 11th. There was a large attendance, practically every creamery in the province being represented. The convention opened with an evening meeting on the 10th, which was presided over by the president of the association, Mr. D. W. Murray, Scotsburn. Addresses were delivered by Messrs. W. A. McKay, Prof. Cumming, Prof. Trueman, D. J. Cameron, butter inspector, Ottawa, and others. The butter judging contest was held on Friday morning and the afternoon was devoted to the business of the association.

The summer butter competition brought out some splendid exhibits. This competition ran for its third year. The conditions are severe. Competitors are required to ship butter on a date selected by the Dairy Superintendent to cold storage, Halifax. A telegram is sent to each competitor and the butter must be delivered at Halifax within 72 hours. This prevents selection of stock. The goods are reshipped to Truro for competition at the convention. The judges this year were Messrs. Harvey Mitchell and D. J. Cameron. The showing this year was most meritorious. The big cup offered went to the Scotsburn Creamery, Scotsburn, N. S. Previous winners in this competition were 1916, Brookfield Creamery; 1917 LaHave Creamery, Bridgewater. The cup must be won three times before becoming the property of any competitor. The scores in this interesting competition, which are published in this issue, show how the standard of the Nova Scotia creameries has been fixed.

The other competitions were also interesting and the results are given elsewhere.

In regard to the general growth of the dairy industry of Nova Scotia, the general remark may be made that the outlook is most encouraging. During the year there was an increase of 175,000 pounds. This, however, leaves much to be done. One Halifax firm alone has been buying 1,000,000 pounds of butter per year outside of the province and it is the aim of the capable head of the Nova Scotia branch, Mr. W. A. McKay to end this by producing sufficient butter to serve the provincial demand. From a production of $40,000 in 1907, the output has grown to approximately a quarter of a million dollars in 1917, an increase which reflects the greatest credit on Mr. McKay.

In a later issue the Maritime Farmer will publish the text of some of the fine addresses given at the conference.

DAIRYMEN'S ASSOCIATION OF NOVA SCOTIA SUMMER BUTTER SCORING COMPETITION

	JUNE NO. 1						JULY NO. 2						AUGUST NO. 3						SEPTEMBER NO. 4						OCTOBER NO. 5					
	Flavor	Grain	Color	Salt	Finish	Total	Flavor	Grain	Color	Salt	Finish	Total	Flavor	Grain	Color	Salt	Finish	Total	Flavor	Grain	Color	Salt	Finish	Total	Flavor	Grain	Color	Salt	Finish	Total	Grand Total	Official Score
1—Scotsburn Creamery Co.	42.6	23	14.43	10	5	95.03	42.86	23	14.87	10	5	*95.73	43	22.94	14.86	10	4.6	*95.4	42.83	23.17	14.93	10	5	*95.93	42.77	23.14	14.93	10	4.96	*95.8	477.88	95.56
2—Pictou County Dairy Co.	42.5	23	14.93	10	5	95.43	42.7	22.96	14.94	9.86	5	95.46	42.7	23.17	15	9.96	4.6	95.4	42.67	22.83	15	9.97	4.93	95.4	42.7	22.6	14.8	9.93	5	94.73	476.72	95.34
3—Intercolonial Creamery Co.	41.16	22.67	14.77	10	4.8	93.4	42.5	22.4	14.84	10	5	93.73	42.5	23.27	15	9.93	4.4	94.6	42.67	22.67	15	10	4.65	94.9	41.26	22.5	14.4	10	4.6	92.86	469.39	93.88
4—Margaree Creamery	42.3	22.8	14.8	10	4.5	94.43	42.1	22.24	14.86	10	5	94.3	42.16	23.36	14.91	10	4.5	94.9	42.2	22.37	14.87	10	4.63	94.2	41.5	22.53	14.44	10	4.86	92.33	469.22	93.84
5—Antigonish Dairy Co.	42	22.5	14.86	9.94	4.5	93.8	42.6	22.66	14.87	9.93	5	95.06	42.1	23.23	14.77	9.8	4.6	93.5	41.93	22.6	14.83	9.93	4.77	94.06	10.76	22.06	14.66	9.7	4.94	92.06	468.48	93.69
6—Baddeck Creamery	42	22.5	14.76	10	4.5	93.76	41.43	22.34	14.76	9.93	5	93.46	42.1	22.43	14.83	9.9	4.3	93.56	42.27	22.43	14.87	9.93	5	94.5	41.5	22.06	14.7	9.94	4.86	93.06	468.34	93.67
7—La Societe d'Industrie Lartiere	42.33	22.3	14.2	9.9	4.5	93.23	41.77	22.3	14.4	9.63	5	93.1	42.03	22.57	14.6	9.6	4.5	93.23	42.33	22.6	14.8	9.7	5	94.43	41.84	22.36	14.73	9.67	4.6	93.2	467.19	93.45
8—Bayview Creamery Co.	41.3	21.9	14.7	10	4.5	92.1	42.16	22.74	15	9.76	4.5	94.16	42.16	22.57	14.83	9.87	4.5	93.33	42.24	22.36	14.87	9.93	5	94.43	41.16	22.1	14.73	9.73	4.34	92.06	466.65	93.33
9—Acadia Dairy Co.	41.0	22.73	14.9	10	5	93.63	42.17	22.7	14.93	10	4.5	94.3	39.83	22	14.6	9.93	4.7	91.06	41	22.33	14.93	10	4.9	93.16	40.74	22.26	14.73	10	4.94	92.73	464.88	92.98
10—LaHave Creamery Co.	42.5	22.86	14.9	10	4.7	94.96	41.56	22.7	14.87	10	5	94.2	40.74	22.66	14.8	10	4.7	92.9	37.66	22.33	14.84	10	5	89.83	40	22.5	14.66	9.93	4.94	92.03	463.92	92.78
11—Brookfield Creamery Co.	41.6	22.1	14.6	10	4.8	93.13	41.5	21.84	14.8	9.66	5	92.8	41.5	21.83	14.73	9.3	4.5	91.86	41.5	22.06	14.86	9.57	4.84	92.83	40.93	21.84	14.73	9.93	4.93	92.36	463.28	92.66
12—Milburn Creamery Co.	40.34	22.1	14.56	9.86	5	91.86	41.36	22.37	14.87	10	4.83	93.43	41.16	23.17	14.67	9.83	4.5	92.33	40.73	22.27	14.86	10	4.4	92.26	40.06	22.34	14.77	10	4.76	91.93	461.81	92.36
13—South River Creamery Co.							40.9	22.1	14.73	9.93	4.5	91.66	23.17	14.87	9.93	5		93.03	41.46	22.17	14.84	9.93	4.6	93	40	21.87	14.53	9.86	4.24	90.5	368.39	92.10
Cumberland Co-Operative Creamry Co.	40.67	22	14.57	9.76	4	91.00	40.5	22.1	14.76	9.6	5	91.96	41	23.17	14.83	9.46	4.5	91.96	40.9	22.26	14.9	9.87	4.83	92.76	39.67	22.1	14.77	9.86	5	91.4	459.08	91.82
Yarmouth Creamery, Ltd.	40.5	22.33	14.7	9.83	4.5	91.86	40.77	22.7	14.83	9.76	5	93.06	40.5	22.7	14.9	9.83	4.5	92.43	40.1	22.27	14.77	9.93	4.43	91.5	39.9	22.1	14.56	9.8	4.17	90.53	458.38	91.68
Clare Creamery Co., Ltd.	42.1	22.26	14.4	9.67	4.5	92.93							40.16	21.84	14.33	9.3	4.3	89.93	40.87	22.27	14.7	9.66	4.5	92	39.23	22.17	14.47	9.06	4.33	89.26	364.12	91.03

*Highest Score for Month. Prize $10.00 donated DeLaval Co.

PRIZE WINNERS AT THE NOVA SCOTIA DAIRYMEN'S ASSN. BUTTER SCORING COMPETITION

Name and Address	Score	Award
J. D. McKenzie, Bridgewater	94.98	1—$10.00
T. A. Chisholm, Loch Katrine	94.46	2— 8.00
A. M. Wheaton, Wolfville	94.38	3— 6.00
J. E. Falt, Antigonish	93.74	4— 4.00
W. L. Brenton, Brookfield	92.46	5— 2.00
A. Robichaud, Meteghan	92.28	6—
A. Cameron, South River Station	91.96	7—
A. McDaniel, Margaree	91.60	8—
H. A. McDonald, Malignant Cove	90.00	9—
Fred I. Murray, Scotsburn	89.78	10—
B. P. Owen, Truro	88.64	11—
F. A. Illsley, Berwick	87.76	12—
G. L. Watson, Brookfield	81.68	13—

30 LB. BOX PRINTS

Name and Address	Flavor	Grain	Color	Salt	Finish	Total	Award
Acadia Dairy, Wolfville	42.87	22.80	14.83	10	5	95.5	1
Scotsburn Creamery, Scotsburn	42.1	22.83	14.9	10	5	94.83	2
Brookfield Creamery, Brookfield	42.4	22.23	14.77	10	5	94.4	3
Antigonish Dairy	41.9	22.13	14.7	9.93	4.8	93.46	4
LaHave Creamery Co., Bridgewater	41.6	22.04	14.8	10	4.86	93.3	5
Pictou County Dairy Co., Stellarton	41.4	22	14.77	9.93	4.93	93.03	6
Bayview Creamery Co., Stirling Brook	41.46	22.2	14.8	9.93	4.57	92.96	7

28 LB. BOX SOLIDS

Acadia Dairy Co., Wolfville	42.86	22.8	14.84	10	4.76	95.26	1
Scotsburn Creamery Co., Scotsburn	42.17	22.83	14.83	10	5	94.83	2
Brookfield Creamery Co., Brookfield	42.4	22.4	14.77	10	4.86	94.43	3
Antigonish Dairy Co., Antigonish	42	22.43	14.83	9.94	5	94.2	4
Pictou County Dairy Co., Stellarton	41.34	22	14.7	9.76	5	92.8	5
LeHave Creamery Co., Bridgewater	41.67	31.03	14.7	10	5	92.4	6

REPAIRING THE ORCHARD

The season for overhauling the orchard is rapidly approaching. Some farmers do not realize the necessity of going carefully over every tree and giving it a certain amount of repairing. Nevertheless, it is all important and time spent in this way will yield a good profit.

The heavy crops of apples of the previous autumn may have split or cracked some portion of the trunk or a limb may have become partially detached from the main body of the tree. An iron rod with large washers on each end placed through the limb and parent trunk may prolong the life of this limb for many years. The rod should be made sufficiently long, so that the future growth will not be interefred with. Wounds caused by pruning knife or saw should receive careful attention. It may be that some old wounds have not healed and decay has set in. The decaying wood should be cut out and the space filled with some waterproof substance, as cement.

The storms of winter may have caused damage, large limbs may have been broken off and the bark of the tree injured. All splinters and stubs of limbs should be trimmed with the pruning saw so as the moisture can not collect on the damaged surface and start decay.

In young orchards and even in fairly old plantations there is always a danger of girdling from mice or rabbits. The life of many trees can be saved where this has happened if prompt measures are employed. As an instance of this let me tell of a tree that came under our observation a few years ago. This Talman Sweet tree was about fifteen years old, and had been bearing for some time. It was valued quite highly by its owner, but was almost completely girdled and he expected it was lost. An old orchardist was consulted and he instructed the man to bridge-garft the injured parts and to trim back the top. This was done and the tree continued to live and today is apparently as healthy as ever.

In order that anyone can inetlligently repair trees of any description it is important that they understand something of its life and manner of growth. To quote an article that recently came to my notice.

To many of us the structure, growth and physiology of a tree are practically unknown. We have a vague notion about trees adding a new ring of wood each year. The trunk of a tree seems to us to be mainly useful to hold up the leaves, and we talk about the roots taking moisture from the soil and feding the tree.

"As a matter of fact, the mineral salts and the water that the roots take up the in such crude form that they are fo no use whatever to the tree until they have been through what is really a digestive process. This process takes place in the leaves so the trunk of the tree must act as the circulation medium for the leaves and again for the digested sap to flow back and give nourishment to all the living cells, even the roots.

"The crude stream flows upward through an inner circle of the tree trunk, and the digested stream flows downward through an outer circle. It is this outer portion of the trunk, that gives the added layer of new growth to the tree. This vital circle lies just next the bark, and is called the cambium. A cross section of a tree shows this to be softer and more moist than any other part.

"Being thus soft and lying so near the outer surface, it is naturally liable to injury, and the injury of this most vital part means danger to the tree. With these few simple facts in mind, it is easily seen why tres should be protected from the teeth of horses carelessly hitched to them, why guy wires should not be fastened to them, and why all the other brutal abuses of trees should be taken in rand by law if necessary.

"Natuhe has her own way of healing tree wounds, whether made by man's carelessness or by severe storms. When a limb is broken off the exposed bit of cambium receives a generous supply of the sap, and because this sap gives growth it at once sets to work to repair the part destroyed. It forms a fold or lip about the wound which gradually covers and protects it.

"The great danger to a tree is not in losing a limb, but in having a wound made in which water can stand and cause decay, or in which injurious insects can find lodging. Nature heals the wounds wisely, but she cannot heal it rapidly enough to eliminate these dangers, and this is where man's skill comes in to hasten the process of healing."

VETERINARY ADVISER

Veterinary Editor,—"I am in need of a good reliable "Veterinary Adviser." Kindly give me information regarding such a book.—J.R.Dundas, Ont."

It is hard to recommend a work on veterinary science for the average stock owner, as a person who has had no special training is not able to distinguish diagnostic symptoms. Probably the best work for the purpose is "The Farmer's Veterinary Adviser."

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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JANUARY 22nd, 1918.

DATES OF ISSUE.

January	22
February	5-19
March	5-19
April	9-23
May	7-28
June	11-25

SUNLIGHT AND AIR FOR LIVE STOCK QUARTERS; PRECAUTION IS NECESSARY AGAINST THE SPREADING OF DISEASE

Fresh air and sunshine in the stable come high but must be provided if the livestock is to be kept in health during the long period of confinement that occurs with every winter season in the northern latitudes. The usual method of providing heat by crowding a large number of animals into a small stable—too often dark and damp in addition—must be given up in favor of greater space per ead, more windows and a thorough system of ventilation and drainage. The spread of tuberculosis in cattle can usually be traced to the system of overcrowding, accompanied by the exclusion of sunlight from the stables, and statistics show that the disease is much more common in the North, where close stabling is necessary throughout the winter, than in the South, where cattle winter more or less outdoors. Milch cows are more susceptible to infection than are steers owing to the constant strain of milking, which weakens their constitution to some extent, and it is most important for their protection and as a safeguard to the people using the milk as food, that cattle of the dairy herd be kept unquestionably healthy.

A free use of the tuberculin test, followed by the killing of all reactors would go a long way in ensuring the health of future generations of farm animals of several classes and would prove, in a few years, a great saving to livestock owners in general. Thanks to the fact that hogs are killed for the greater part, at an early age, tuberculosis in these animals does not develop sufficiently to be recognized, or is confined to parts of the body in such a manner that the greater part of the carcass will pass inspection; yet the records of a packing plant in Wisconsin for 1916 show that 24 per cent of the hog s slaughtered were found on post-mortem examination, to be affected with tuberculosis, and it has been found that much of this trouble in hogs occurs in herds that have followed affected cattle in the feed lots or have been fed raw skim milk from cows affected to some degree.

Since pasteurization of all milk intended for human consumption is enforced in many cities at the instigation of health officers who have a thorough understanding of the importance of this precaution for the maintenance of the public health. it stands to reason that milk producers who feed by-products such as skim milk or buttermilk to their stock should adopt the system of pasteurization of these by-products for the protection of their animals. If milk is heated to 146 degrees and held for 20 minutes or heated to 180 degrees and held for one minute, the tubercular bacilli are killed and the product made safe for man or beast. This precaution, together with proper attention to drainage, ventilation, admission of sunlight to livestock quarters would reduce loss from disease of all kinds to a minimum.

THE DAIRY OUTLOOK

The opinions of many breeders and others who are actively associated with conditions regarding the present dairy situation have been expressed repeatedly. Without a doubt this question is foremost in the mind of the thoughtful dairy farmer who derives his main income from the herd of good producers he has built up. This, of course, is as it should be.

The question arises as to just how serious this problem is right now, and D. H. Propps of the Agricultural College of Newbraska brings out some arguments and statistics which give an encouraging outlook to the future of the dairy industry. From all sections reports come that dairy cws are being sold off in large numbers and this action in a very short time will have a decided effect on the future of the industry. However, if we stop to consider, would we not in all probability agree with Mr. Propps when he says that in most instances these cows which have been sold have been the ertra poor producers and in many cases the other extreme—the real good producers —are being bought for dairy purposes? Of course this sort of action woul dcause a material decrease in dairy products at a time when they are much needed, but in view of the fact that in a good many instances the prices received for these products are not commensurate with the costs incident to production, a great many breeders are doing only the proper thing when they dispose of the poorer animals.

WHERE CANADA MIGHT BENEFIT

In the aged Shorthorn cow class at the Chicago International and at all leading American shows, in fact, it is stipulated that cows must be shown with calf at side nursing. The sight of a dozen great matrons coming forward in this class, each with a husky youngster at foot, was striking to a Canadian spectator. In Canadian showrings no premium is placed on the breeding ability of a cow; in fact, she stands a better chance of winning if she has no calf, simply because she is usually in better condition than a cow nursing a calf. To see a big, fat barren cow pulling down good money year after year simply because she is fitted for the occasion is an economic waste at any time, but a most undesirable procedure in time of war.

The wisdom of this American regulation when contrasted with our own is obvious in the extreme. The idea from the other side is a practical, profitable and highly commendable one. It places a premium on the individual and her ability to breed, two fundamentals in herd building. Our system is extravagant, unprofitable and undesirable, because it fails to recognize the practical aspects of showyard influence. It encourages the fitting of good females to a point where their breeding propensities are destroyed. It places upon a cow the value of a breeder when actually her value is limited to her market selling price as beef.

We understand that this regulation applying to Shorthorns is soon to be extended to the Hereford and Angus breeds. This recommends its merit. We in Canada may well benefit by the suggestion, especially at our larger shows. It would mean a substantial increase in entries, and would remove from our shows one of their most detrimental features.

"JUST FIGGERING"

Keep your lead pencil busy this month closing up the year's records. This is the best paying job you can do. Anyhow, you have got to do it to make out your returns for 1917. The farmer's best friend is a lead pencil, persistently employed in making black entries on the white pages of an account book. It will make you rich if you let it. Lack of an active, accurate, truthful lead pencil has cost many a man his farm. Be sure, this January to make a record of everything you own and everything you owe. Compare this with the similar inventory a year ago. Even without further accounting, you will then know how much you have gained or lost during 1917.

TWO AND HALF CENTS AN ACRE IS COST OF SURVEY

Two years ago, New Brunswick inaugurated a survey to find out just what it possessed in the way of forest resources. To date, 1,200,000 acres have been covered, of which 600,000 were surveyed this year at a cost for the field work of only 2½ cents an acre. The J. B. Snowball Company is co-operating with the Provincial Government by making available to it the information which the company obtained in a survey of its forest properties.

The estimated amount of spruce and balsam in New Brunswick is only about 30 times the present annual cut for lumber and pulpwood. One of the principal objects of the survey is to manage the forests on a permanent basis so that no more than the annual growth will be cut each year. Coniferous species are being heavily over-cut as compared with hardwoods.

* * *

HOW TO ADVERTISE

John Wanamaker once said if there is one enterprise on earth that a quitter should leave severely alone it is advertising. To make a success of advertising, one must be prepared to stick like a barnacle on a boat's bottom. He should know before he begins that he must spend money —lots of it. Somebody must tell him that he cannot hope to reap results commensurate with his expenditure early in the game. It begins very gently at first, but the pull is steady. It increases day by day and year by year until it exerts an irresistible power.

* * *

Clean all grain well before seeding next spring.

* * *

Too many country homes are unattractive on account of their untidy and ill-kept appearance.

* * *

Clean up the rubbish this fall and burn. Rubbish piles make convenient hiding places for vermin.

Glace Bay Poultry Show

The fifth Annual Show of the Glace Bay Poultry Association was held in Alexandra Rink on Nov. 23, 24, 26, and was very successful, both in number and quality of exhibits; in fact, although the numbers were no greater than in some previous years, the quality of the stock show was much improved. With the large floor space available it was found possible to coop all the birds in single tiers on one level with large aisles between the rows, and the splendid lighting showed them off to excellent advantage.

A new feature, and one that created much interest, was the exhibit of dogs held in connection with the poultry show.

The Dominion Government Egg Exhibit in charge of Mr. Poirier, former an interesting and instructive feature of the show. It depicted the results obtained by the old fashioned, hit or miss method of poultry keeping in comparison with the modern methods. Mr. Poirier proved to be one of the boys and made many friends, who will hope to see him at our next show. He tried very hard to take the Club pet lamb home with him, but was not successful. Better luck next year old man.

A model poultry house, constructed by one of the Association members, was on exhibition and was examined by large numbers. It was furnished completely with roosts, dropping board, dust bath, trap nests and feeding appliances and was designed to accommodate twelve hens.

Refreshments were served in a large heated tent in the building and this tent was well patronized by the members and the visiting poultrymen.

This show is without doubt the most successful that has been held in the Maritime Provinces this year. Many who sent to Ontario and the U. S., and paid a long price for birds, were surprised to find that they were not good enough to win against home bred stock.

Mr. Edgar Muggah was manager and proved to be efficient and courteous. He was on the job fifteen hours a day and gave satisfaction both to the exhibitors and visitors, and was ably assisted by the executive and members of the Association.

The judges were Mr. W. H. Henry, who judged the Reds, Houdans, Breeding Pens and Waterfowl, and Mr. J. P. (Joe) Landry, who placed the awards on the remaining classes.

Mr. Landry's Classes

Brahmas—A rather small class of fair quality.

Barred Rocks—One of the largest classes with good quality birds show in poor condition. 1st Cock good type bird, nice barring. 2nd, poorer in barring, but shown in better shape. Hens were well barred, but under weight. 1st Cockerel extra good quality, but poor condition. 2nd and 3rd not so good. Pullets were also of fine quality.

White Rocks—First Cock, extra good quality and type well shown and fit to win in any competition. 2nd under size. Hens, an even lot of good quality, well shown. 1st Cockerel. This bird was awarded silver cup as best cockerel in show. He was of splendid quality and good type. 2nd and 3rd, large birds, carry their tails high. 1st and 2nd pullets, good birds, well shown. 3rd. Good bird but out of condition.

White Wyandottes.—A large class of the best quality. The winners were shown in perfect condition. 1st Cock good type, white and in perfect feather. 2nd and 3rd close up; 3rd losing to 2nd on comb. 1st, 2nd and 3rd hens good quality and perfect condition. 1st Cockerel, a typical bird, well feathered. 2nd very close up. 3rd not so well shown and poorer in head. 1st pullet good size, won over the others in comb.

Single Comb White Leghorns—A large class of beautiful quality and winners all in perfect condition. 1st Cock a beautiful bird in full feather, with nice long back, low well carried tail and excellent head points. 2nd close up but not so smooth in sweep of back and tail. 3rd a large very well furnished bird, lost on comb and lobes to others. Hens a nicely shown lot, low tailed and rather straight in back. Cockerels an even lot. 1st, a larger bodied bird than others. 2nd immature, but a very promising bird. 3rd a better furnished bird than either of the preceding ones. Pullets a good lot, the winners were more mature than the others in class.

Rose Comb Whites.—This was the largest class in show, and produced some excellent specimens. 1st Cock, a nice large, long bodied bird with good head points, carried tail rather high. 2nd, a beautiful type of bird, but undersized. Hens a nice even lot. All the winners were pen mates and very close in quality. 1st Cockerel, a nice typical leghorn, not finished, will make a good bird. 2nd, not so well matured as 1st, but nice type and good head points. 3rd a large bird, rather coarse in head points. 4th and 5th very nice type, but small, not fully grown. Pullets a good lot. 1st pullet more fully matured than others. 2nd and 3rd very close up. The remainder good birds, but not finished. All this class is inclined to high tails.

Singe Comb Brown.—A small entry of fair quality.

Rose Comb Brown.—A small class. 1st Cock good color, nice striping. 2nd smaller bird. Hens nicely colored, good type, well spread tails. 1st Cockerel a nice bird with fair color. Pullets a good lot.

Buff Leghorns.—A small class of very good quality, especially 1st Cockerel.

Rose Comb Black Minorcas.—1st Cock good quality, size and carriage. Hens good. Young stock very nice birds.

White Orpingtons.—No old stock shown. Young stock rather immature, but fair quality.

Buff Orpingtons.—Hens good color, under weight. Young stock also under weight, but good color and type.

Anconas.—A rather large class of good quality. 1st Cock a nice large bird, rather coarse in head with too much white in wing and tail. 2nd, a nice type bird, not enough mottling and rather small. Hens good in size and type, but inclined to too much white in body. 1st Cockerel, typical in shape and color but not matured. Will make a very nice bird. 2nd too much white. 3rd, not enough mottling. Pullets. All the winners were very nice birds, well mottled and carrying low, nicely spread tails.

Dark Cornish.—An excellent class, typical in size and color, one of the best classes in show, put down in great condition. 1st Cockerel was runner up for best cockerel in show.

White Faced Black Spanish.—A nice class of good birds.

Golden Polish.—A small class of very good specimens.

Columbian Wyandottes.—Small class of good quality.

Partridge Wyandottes.—A small class. The old stock was very good, but the young stock was weak in under color.

Mr. Henry's Classes

S. C. Reds.—A large class of excellent quality. 1st Cock, a bird of the finest quality, even dark top color and dark under color, fine type. 2nd and 3rd, also good birds. Hens good quality all through. Cockerels nice quality birds. Pullets very good.

Rose Comb Reds.—A large class of good quality. The old stock a nice even lot. Cockerels a good lot, but not matured. The pullets were extra good with splendid coloring.

Mottled Houdans.—A rather small class of excellent quality. 1st Cock a nice bird with good type and color. 1st Cockerel a nice large typical bird, with beautiful crest. 1st Pullet very nicely mottled.

Pekin Ducks, a very good class of large birds.

Rouen Ducks.—Also a good class, the winners in old stock being beautifully colored. The Aylesbury, Runner and Cayuga classes were small but good quality.

The awards follow:

Light Brahmas: A. F. Miller, 1st Cock, 1st and 2dn Hen, 1st Cockerel, 1st and 2nd Pullet; Frank Coleman, 2nd Cock.

Barred Rocks: Edgar Muggah, 1st Cock, 1ts, 2nd and 3rd Hen, 1st, 2nd and 3rd Cockerel, 1st, 2nd, 4th and 5th Pullet; Alfred Springhall, 2nd Cock, 4th Cockerel; John Shank, 3rd Pullet, 5th Cockerel.

White Rocks: John A. MacLeod, 1st, and 2nd Cock, 1st and 2nd Hen, 1st and 2nd Cockerel, 1st, 2nd and 3rd Pullet; Ben Leitchfield, 2nd Cockerel.

White Wyandottes: B. J. Sutton, 1st, 2nd and 3rd Cock, 1st, 2nd and 3rd Hen; 1st and 2nd Cockerel; 1st, 2nd, 3rd, 4th and 5th Pullet; M. W. Buchanan, 3rd Cockerel.

Columbian Wyandottes: J. W. Munn, 1st Cock, 1st and 2nd Hen, 1st and 2nd Cockerel, 1st, 2nd and 3rd Pullet.

S. C. White Leghorns: Chas. Johnston, s1t and 2nd Cock, 1st, 2nd and 4th Hen, 1st, 3rd and 4th Cockerel; L. Gillis, 3rd Hen, 3rd Cock, 2nd Cockerel, 2nd and 3rd Pullet, 1st Pen; David MacBeth, 1st Pullet; John MacDonald, 5th Hen; James MacLeod, 4th Pullet.

R. C. White Leghorns: Frizzell and Mattinson, 1st Cock, 1st, 2nd and 3rd Hen, 4th and 5th Cockerel, 1st, 2nd, 3rd and 4th Pullet, 1st Pen; Malcolm MacGregor, 1st Cockerel, 5th Pullet; Daniel Tutty, 2nd Cock; John A. McDougall, 2nd Cockerel; Ben Leitchfield, 3rd Cockerel.

S. C. Brown Leghorns: Rev. T. P. Draper, 1st Cock; William Rankin, 2nd Cock, 1st Hen; Leighton Grant, 1st Cockerel. 1st and 2nd Pullet; Harold Sikes, 2nd Cockerel.

R. C. Crown: Ben Leitchfield, 1st Cock, 1st and 3rd Hen; Rev. T. P. Draper, 2nd Cock, 2nd Hen; H. Warner, 1st Cockerel; Douglas Lawley, 1st and 2nd Pullet; James Derbyshire, 2nd Cockerel; H. H. Hull, 1st Pen.

R. C. Black Minorcas: Oscar Haase, 1st Cock, 2nd Hen, 2nd Cockerel; Rev. T. F. Draper, 1st Hen, 1st Cockerel, 1st and 2nd Pullet.

Buff Leghorns: Carl Haase, 1st Cock, 1st and 2nd Hen, 1st Cockerel.

White Orpingtons: Geo. Hopewell, 1st Cockerel, 1st and 2nd Pullet.

Buff Orpingtons: Morris Feldman, 1st and 2nd Hen, 1st Cockerel, 1st Pullet.

S. C. Anconas: H. H. Hull, 1st Cock, 1st and 2nd Hen, 1st and 3rd Cockerel, 1st Pullet, 1st Pen; W. Sherriff, 2nd Cock; A. D. MacCuish, 3rd Pullet; Jas. Derbyshire, 2nd and 4th Pullet.

Cornish: Louis Gordon, 1st Cock, 1st and 2nd Hen, 1st Cockerel, 1st and 2nd Pullet; Percy Gordon, 2nd Cockerel, 3rd Pullet.

S. C. Reds: Wm. McLeod, 1st Cock, 1st Hen, 1st Pullet; J. W. Munn, 2nd Cock, 2nd and 3rd Hen, 1st, 2nd and 3rd Cockerel, 2nd and 4th Pullet; Malc. MacGregor, 3rd Pullet; John MacDonald, 5th Pullet.

R. C. Reds: R. W. Carmichael, 1st Cock, 1st Cockerel; John MacNeil, 2nd Cock, 4th Pullet; Neah Fairley, 1st Hen; A. D. Reid, 2nd and 3rd Cockerel, 1st, 2nd and 3rd Pullet.

Black Spanish: S. Keith, 1st Cock, 1st, 2nd and 3rd Hen, 1st Cockerel, 1st Pullet.

Golden Polish: A. Gay, 1st Cock, 1st Hen, 1st Cockerel, 1st Pullet.

Japanese Bantams: Archie MacLean, 1st Cock, 1st Hen.

Black Cochin Bantams: Douglas Lanley, 1st Cock, 1st Hen.

Guinea Fowls: Alfred Springhall, 1st Cockerel, 1st Pullet.

Butter Cups: Michael MacNeil, 1st Cock, 1st Hen.

Jungle Games: Jas. MacDonald, 2nd Cock, 2nd Hen.

Utility Pairs: L. S. Jackson, 1st Hen; Florence Bagnell, 3rd; Edgar Muggah, 2nd; Alex. Brown, 1st Cockerels; Florence Bagnell, 2nd; R. W. Carmichael, 1st Pullets; Wm. MacLeod, 2nd; Alex. Brown, 3rd.

Pekin Ducks: J. M. Davis, 1st Male Sr., 3rd Male Jr.; Robert Crolt, 1st Male Jr., 2nd Female Jr.; Chas. Moffatt, 3rd Female Jr.; H. H. Hull, 2nd Male Jr., 1st Female Jr.

Rouen Ducks: John McKay, 1st Male Sr., 1st Female Sr.; Ben Leitchfield, 1st Male Jr., 1st Female Jr.; Daniel Tutty, 2nd Male Jr., 2nd Female Jr.

A. O. V. Ducks: Morris Foldman, 1st in all sections; Archie Shere, 2nd Male Jr., 2nd Female Jr.

Indian Runner Ducks: J. M. Davis, 1st Male Jr., 1st and 2nd Female Jr.

Bronze Turkeys: Jas. McKay, 1st Male, 1st Female.

Fan Tail Pigeons: A. Gay, 1st Pair; Homer: Noah Fairley, 1st Pair. Clifford Gates, 2nd. A. O. V. Pigeons: Archie Shore, 1st and 2nd pair.

Belgian Hares: Wm. MacKinnon, 1st Male and Female.

Flemish Giant Hares: Carl Haase, 1s tMale and Female.

Silver Black Siberian Hares: W. T. Mattinson, s1t Male and Female.

AT WHAT AGE SHOULD YOUNG SOWS BE BRED

No definite age can be named as being the proper time to breed a young sow. The question is much more one of maturity than one of age or size, and while theyoung animal need not necessarily be full grown, she at least, should have attained to that stage of life when all her powers are strong and well on toward development. In different breeds and in different individuals this will vary greatly.

A young sow being raised for breednig purposes should not be fed heavily enough to produce very rapid growth as it frequently does not make for the best results where animals are carried over from year to year, but in the pig intended for bacon, which has only a few months to live anyhow there is not much danger in so short a time of weakening their constitution by over-feeding.

If a sow is giving proper food and plenty of exercise to keep her growing fast, without laying on too much flesh, she should be ready to breed at about ten months old; some perhaps younger, while others should be older, largely acording to the way she has been managed and the individual characteristics of the sow. She will then be a little over a year old when she farrows, which is soon enough, particularly if she shall be expected to raise two litters a year after she begins to breed. If only one litter is expected of her the first year, which is all that she shoulud do, she coulud then be bred a little earlier if desired.

The effect of breeding a sow too young is to weaken her constitutionally and prevent her from getting a normal growth. To delay a month or so is of little moment as compared with putting a handicap on a sow for all the balance of her life and one should be careful not to err in that direction as mistakes made at that time are not easily atoned for and will be of life-long importance if made in connection with the first litter of pigs.

Dairying and the Development of Dairy Calves

Editor The Maritime Farmer:—

For the past year or so prices of all farm products have ruled so high that it matters little what we raise, we are assured a price never dreamed of in pre-war times. Growing anything eatable for man or beast will now pay handsomely if we can but grow sufficient quantities. This is the problem, the same old problem that Maritime Farmers have faced for years. Happy is the man who has been conserving and increasing his soil's fertility during the last few years, as he is now in a position to produce large crops to help supply the acute demand.

I am afraid the many years of low prices of food production below cost, has taught many of us to be confirmed grumblers, for despite the fact that we are receiving about 100 per cent. higher for our production than we received four or five years ago, we continually hear and read of men claiming that they cannot make any greater profits than when lower prices were the rule. The question of feed is always brought forward as a proof of this condition.

Now granted that feed and wages have risen in proportion to finished animal products, this would only apply to that which might be produced or grown from purchased supplies, but the products, whatever they may be, that are grown from the crops of our own farms, selling for about twice the pre-war value, must give us not twice the profit, (but, as the value is created from extra price alone), many times more profit than we formerly had to be content with. If we are growing as heavy crops as formerly, we are making more money from that which is our own labour at least. But, to be reasonably sure of paying crops from year to year, we must follow some line of live stock farming persistently despite the prices grain may bring. Fertile soil is like a well conditioned animal, it is able to resist adverse conditions whatever they may be. It is possible to get land in such condition that we are guaranteed a fair crop during an unfavorable season and a bumper crop in a good season.

Of all lines of live stock farming nothing is better suited to our condition than dairying and hog raising. If a man is so situated that he can afford it, and satisfied to make only an easy living or a mere existence by farming, then this branch will not appeal to him; but if a man is ambitious to increase his wealth, to pay off any indebtedness, or to make his farm double and treble its production, and be a property he can justly take pride in, nothing will be so suitable or sure as a line of co-operative dairy farming.

We might quote instances of the wonderful development of different countries such as Denmark, that all must admit, could not have increased her prosperity in any other known line of farming other than that followed by them. But Denmark's or even Ontario's particular condition may be unlike ours, and is not generally accepted as a safe one for Maritime farmers to follow, but we can find sufficient evidence of the benefits of dairy farming nearer home, and I will mention one:

The 'Island" is divided into fifteen electoral districts, twelve of these are districts of the towns and are solely agricultural, and are, or were at one time provided with cheese factories or creameries within reach of almost every farmer. A few of these factories have gone down and out, some others do not get sufficient patronage to pay properly, while others manufacture successfully for five or six months, and several creameries have been doing business continuously for over twenty years. The latter are principally confined to one electoral district, that is at present supplying nearly one-half the entire amount of milk furnished our dairy plants. This one-tenth of the Province is making nearly as much milk as the balance and with the result that the rate of taxation—which is a pretty fair way of valuing any country—is in this particular district about twice as high as the others. This is one of the best proofs of the benefits that co-operative dairying may be to any country.

Few men seem to realize the amount of value directly and indirectly a good working herd of dairy cows can be on any farm. In fact, where the year's production from the cows is calculated on many farms, sufficient credit is not given for the amount of milk and cream consumed on the place during the year. This amount on many farms, runs up to figures not often realized.

Where butter making is practiced, the value of sweet skim milk is seldom properly credited. Every experienced person knows that it is now very valuable as a stock food for the amount of nourishment it contains, and clear of its straight food value, milk for all young growing animals cannot be substituted.

It is not altogether how much an animal will grow on its ration of milk, as that it will often be a complete failure without it. Skim milk is good for everything, and the farmer who has any quantity of it all the year, will be

(Continued on page 240)

The Ford Saves the Hay and Oats the Horses Eat

IT HAS been estimated that five acres of land are required to maintain one horse for a year, and that the same five acres would produce nearly enough food for two people. If 50,000 Canadian farmers each replaced one horse with a Ford, 250,000 acres would be added to the Nation's source of food supply and enough extra food made available to feed 100,000 people.

Just think what a great service this means to the country at the present time and the benefit to the farmers from the sale of food produced on this acreage.

A Ford car also saves the farmer a week or more of valuable time each year, which can be used for further productive work. The Ford travels three times as fast as a horse and rig—costs less to run and keep, and is far easier to take care of. With labor so scarce and high priced, time means money, so do not delay in getting your Ford.

Ford

Runabout - $475
Touring - - $495
Coupe - $770
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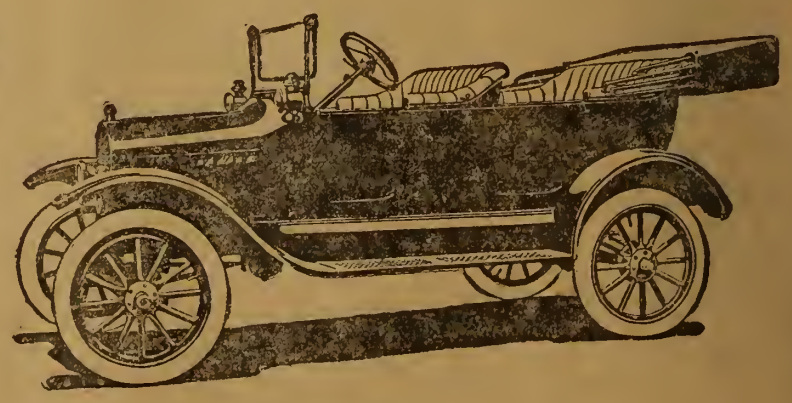

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FARM LIGHTING SYSTEMS

Conditions change from year to year and what were considered luxuries a few years ago are now considered necessities. This is particularly true with reference to conditions on the farm. Things are no longer "all right because our fathers got along with them." The up-to-date farmer of the present time must have his home equipped with all modern conveniences not only because they add to the pleasure of living but also because they make him more efficient in his farm work.

One of the most important farm home conveniences is a good lighting system, a system which will do away with the dirty, ill-smelling kerosene lamp, which is a constant source of danger, is inconvenient, inefficient, and a care to the busy housewife.

Kerosene Lighting

Nearly all progress in lighting systems for the farm home has come about during the last half of the last century. Not many years ago our fathers were using the tallow candle and dip. The petroleum industry was not developed until 1860 and the general use of kerosene did not come until many years later. The kerosene or coaloil lamp was a great improvement over the method of lighting used by our forefathers. But it is used now in many homes that could well afford a better system. While kerosene lamps have objections, their merits should not be overlooked. The chief reasons for their common use are that the first cost is low, and fuel is cheap and easy to obtain. They are not dangerous when they are carefully handled, and they can be easily carried from one place to another—an advantage over most modern systems. Some of the objections to the kerosene lamp are: The odor is very unpleasant; it requires a great deal of attention; it develops a great deal of heat; it consumes a great deal of oxygen, making the air impure; the smoke from the lamp is a nuisance, settling on the furniture and furnishings of the house; it is not efficient when the amount of light produced is considered; the color of the light is not desirable.

Kerosene Mantle Lamp

A great step in advance of the old style flat wick burner is the kerosene lamp with a mantle. The first cost of such a lamp is more than that of the old style lamp but the addtiion of a mantle increases the efficiency many fold. Such a lamp gives a better light, requires less air than the old style lamp and gives off practically no odor. It has been found by experiment that a mantle lamp will give more than four times as much light as one of the ordinary tubular wick type where the same quantity of fuel is used. A mantle must be handled with care as it is fragile, and the wick must be trimmed right to give best results.

The farmer who is looking for a more improved lighting system than the mantle lamp has three systems from which to choose: acetylene, gasoline and electric. Each of these systems has certain advantages and disadvantages. Local conditions as well as desires on the part of the prospective would determine the system finally selected.

Acetylene Lighting

Acetylene is a gas produced from a commercial product called calcium carbide. Calcium carbide has been known for a number of years but it was not until the advent of the electric furnace that it could be made in quantities large enough for commercial use. This material is made of lime and charcoal and fused at a very high temperature. Calcium carbide in itself is not dangerous. However, it must be stored in water-tight and air-tight containers. If kept sealed from air and water it may be preserved for any length of time but when brought in contact with water a vigorous decomposition takes place and a gas, acetylene, is given off. Pure acetylene gas will not explode unless it is under pressure or until it is mixed with air.

There are a great many types of acetylene generators. The essential principles in all are the same, that is, the carbide and water must be brought together before the gas will be given off. The different plants might be placed in two classes, automatic and non-automatic, or the carbide-to-water feed and the water-to-carbide feed. The automatic type is the farm plant—it automatically takes care of itself after being properly charged. The non-automatic type is a large plant used in small town installation and requires an attendant to operate it. The carbide-to-water feed is the most common and most satisfactory; a great deal of water is available which insures cool generation.

Acetylene generators may be classed also as indoor plants and out-door plants. The out-door plant is the safer type. There are two kinds of out-door plants: the pit type and the above-ground type which is designed to resist cold weather. One of the advantages of the above-ground over the pit type is the fact that it can be cleaned out and recharged much more easily. The indoor generators may also be put in two classes: the large type which is put in the basement and the small semi-portable type which is sometimes put in the kitchen. The indoor plant is not recommended because of the greater risk and the fact that it must be recharged too often. The out-door plant of about 100 pounds capacity which does not require recharging oftener than once in three months is the best suited to the average farm.

Gasoline Lighting

Before gasoline will produce a suitable light it must be converted into a gas by one of three general methods. In the first method, the one that is probably most used and is the most dangerous, the gas is produced by heating. Examples of this method of producing gas are the gasoline stove, gasoline blow torch, iron, portable gasoline lamp and the systems where gasoline is piped through small tubes to the individual lamp. The gasoline in each of these appliances is under air pressure, produced by pumping, and is forced to the individual burners where the gas is generated. The flame heated generator, whether it has inside or outside tank, would come under this method of producing gas. The second method of producing gas from gasoline is by bubbling air through gasoline. In the generators of this type, air bubbles through a tank of gasoline and becomes nearly saturated. These generators are usually of the larger type and where located outside under ground are considered quite safe. The third general method of producing gasoline gas is by bringing air in contact with the surface of gasoline in a large tank. Nearly all gasoline plants which supply gas for laboratory or similar use are of this type. These machines are located outside and are safe. A carbureter is a part of a machine of this kind and it adjusts the air and gasoline to the right proportion. A high test, high priced gasoline must be used in a plant of this type. Comparatively few of such machines are used on farms.

Electric Lighting

While electricity has outstanding advantages for farm lighting there are certain disadvantages which would have to be considered by the farmer before he would wire his house for electric lights. The principal disadvantage is the fact that the farmer does not always secure a suitable source of electricity to produce his lights. There are two sources available for this purpose. The first is the small storage battery plant operated automatically or non-automatically by a gasoline engine. A great many of them are giving first class service. The second source of electrical energy is from high voltage lines which run by a farm in going from one town to another or from lines extended out into farm districts for the use of the farmers only. This is the best source of power for the farmer if obtained from a good company, at a reasonable rate.

There are four essential parts of the small electric plant; namely, a source of power, a generator, a storage battery, and a switch-board. Some form of gasoline or kerosene engine is usually used as a source of power. In some sections a water mill is available. A few wind-mills have also been used successfully.

The function of the engine, water wheel or windmill is to transform the stored up energy of the fuel or the energy of the wind or water to a form of mechanical energy suitable to drive the generator. The function of the generator is simply to transform the mechanical energy into electrical energy. The generator used is one of the direct current type so that the power can be stored in the battery. The voltage of the generator is either a standard 110 volt or 32 volt which is commonly called the low voltage plant. By using a low voltage generator the cost of the storage battery is materially reduced. The only reason a low voltage plant is not advisable in all cases is because it is not feasible to transmit low voltage electricity to a very great distance without a great loss or it would necessitate a very large conducting wire. This is comparable to water under high and low pressure—if it is under low pressuse, larger pipes are required to carry an amount of water equal to that carried through small pipes from the high pressure pumps. When buildings are several hundred feet apart high voltage plants are advisable.

The function of the storage battery is to act as a storeroom for the electrical energy and corresponds to the water tank in a water supply system. If water is not being pumped the water is used from the storage tank; if the pumps are in operation and the water is not being used as fast as pumped part of it will go into the tank and part will go out into the pipes. This is equally true of the electric plant. The storage battery acts as a tank or reservoir.

The switchboard with the switches and instruments which are mounted on it is a door to the storeroom or storage battery. The instruments make it possible to see at a glance the condition of the battery. With the switches, the lights can be turned on or off when desired. The protective devices simply protect the battery and generator when there is an unusual rush of current.

While all of the different makes of electric plants are the same in principle there are plants on the market that operate automatically, others that operate partly automatically, and still others that are manually operated. There are plants in which the generator, engine and switchboard are all in one unit while others have the engine connected to the generator by belt. One thing about the latter type of plant which appeals to a great many men who own engines is that they can drive the generator at the same time the engine is being used for some other purpose. With a uniform speed engine belted to a line shaft this arrangement would no doubt be a good one, and would save the cost of a new engine.

The following table shows the relative cost of various kinds of light. The cost is for one 40 candle power lamp burning 1000 hours, which is equivalent to two 40 candle power lamps burning three hours each night for nearly six months, or about eight or nine ordinary batwick coaloil lamps burning during the same period.

Readers will notice that these prices are based upon quotations at American poists. In most parts of Western Canada these prices would be considerably higher.

Kind of Lamp	Cost
Gasoline with gas mantle, gasoline at 20c gallon	$0.49
Electric arc lights, 10c kilowatt hour	2.82
Kerosene lamp with mantle, kerosene at 12c gallon	2.88
Artificial gas with mantle, gas at $1 per thousand feet	3.20
Blaugas, 10c per pound	3.33
Electric tungsten lamp, 10c kilowatt hour	5.00
Acetylene light, carbide at 4c per pound	6.68
Artificial gas, open bame at $1 per thousand feet	8.33
Kerosene lamp, bat wick, kerosene at 12c per gallon	13.75

The first cost of a complete installation of different lighting systems for farm homes is about as follows:

1. Acetylene $150.00 to $500.00.
2. Gasoline $25 to $500.
3. Blaugas $125 to $300.
4. Electric $250 to $600.

A modern lighting system should not be selected on the basis of economy. It costs money to be comfortable and happy, and a throughly efficient lighting system will bring many joys into the home. One man who owns a modern lighting system says he would not recommend it to his neighbors because it costs more than kerosene. Another says it takes too much time to keep it operating. Such statements are ridiculous. People might just as well get along without kerosene and live as men of one hundred years ago—it would probably be cheaper. The man who claims it takes too much time to operate a modern lighting system does not realize how much time is spent by his wife in caring for the coaloil lamps.

To neglect providing a suitable lighting system for the home is often a great mistake. The man who will not spend money for this purpose will likely have to spend more in correcting his children's eyes. Short-sightedness in school children is a very common defect which increases with age. It is due principally to poor school room lighting and to poor lights in the home. When a child reads by a poor light there is a tendency to hold the book near the eyes and near-sightedness is the result.

When so much money is being spent for all kinds of farm machinery, better livestock, good seed and other improvements, conditions in the home should not be forgotten. Every farmer should put in a good lighting system along with the other modern conveniences for the welfare and happiness of the whole family.—E. W. Lehmann, Missouri Agricultural College.

HOW TO USE FROZEN POTATOES

"Frozen potatoes are not necessarily spoiled," writes M. deRosinor in a French agricultural paper. Although not very palatable in this condition, they may be dried and then cooked as usual. As frozen potatoes decay rapidly when thawed out they must be evaporated as soon as possible and can be dried in the oven of an ordinary cook stove. Heat the oven to baking temperature put in the potatoes and leave the door open. Spread them out in a layer and stir them up with a poker from time to time, to faciltate and hasten the drying process. When the drying is gone far enough the potatoes will be hard like pieces of wood, in which condition they will keep indefinitely.

Dried frozen potatoes are most suitable for stock feeding. In preparing them for use, boil them with enough water to bring them to the consistency of mashed potatoes. It will be found that they have lost none of the elements that gave them their nutritive value, alhough, of cuorse, they will not be as palatable, nor taste the same as potatoes which have not been frozen.

The best width of wagon tires has been found to be: one horse wagon, 2 inches; light two hores wagon, 2½ inches; medium 2 horse wagon, 3 in.; standard 2 horse wagon, 4 inches; and heavy 2 horse wagon, 5 inches. These figures were secured in extensive tests on earth and macadam roads by the U. S. Department or Agriculture.

HORTICULTURE

APHIDES

Aphides are tiny, soft-bodied, usually sluggish insects. There are a great many species, and so common are they that most of our plants are attacked by at least one species and sometimes by several.

The different species often differ greatly in color; some are green, others black, others red, others brown, and so on. They all obtain their food by sucking the juices out of the plants after first penetrating the epidermis with their sharp needle-like lances. As they feed they exude from time to time a clear, sweetish liquid called honey-dew, of which ants are very fond.

When the aphides are very abundant, such a large quantity of honey-dew is exuded that it covers the leaves and fruit and causes them to become sticky and later a dirty sooty color, due to a black fungus which grows in the honey-dew. There are many generations each year, some species having thirteen or even more. Each generation, except the last, consists entirely of females. The last is composed of true sexual forms, males and females. These mate and the females lay eggs for winter and then living young instead of eggs are prodie.

In all the preceding generations duced, and that too without the presence of any males. The first generation in the spring is composed entirely of wingless forms, but in the later generations winged forms appear. These can by from tree to tree and so distribute the species. Some, but not all, species have what is known as an alternate host plant or plants; that is they remain from one or more generations in the spring on the plant on which they over-wintered and then a winged generation appears which migrates to some other kind of plant and lives and reproduces on this until autumn, when another winged generation is produced, which migrates back to the original host.

The rate at which aphides can multiply is marvellous and far surpasses that of any other common orchard pest. This is due to the fact that there are so many broods each year, and that each brood except the last is entirely composed of females. Very fortunately for us, these insects have many enemies which do a great service in helping to control them. The chief of these are Ladybird beetles and their larvae, Syrphus Fly and Lacewing larvae and tiny four-winged parasites. In addition to these, disease often destroys countless numbers and weather has also a great influence. Cool, moist weather seems to be favorable an hot, fine weather unfavorable to orchard aphides.

FERTILITY OF RASPBERRY SOILS

The use of fertilizers in raspberry plantations is governed by the same principles that appl yto their use with other fruits. As soils vary in the quantity and availability of the plant food they contain, the fertilizer problem is a long one, which each grower must solve for himself. By using varying amounts of the different elements of plant food on different plants and keeping a record of the yields, each grower can determine readily what kinds and quantities of fertilizer to apply.

Good management, however, will insure a large amount of humus in the soil at all times. It is especially desirable that the humus supply be ample when the plantation is first set out. It is much easier and cheaper to furnish the humus by means of cover crops and stable manure before the plantation is set than afterwards when the plants are growing. Moreover, by such extra care before setting, it is possible to secure a fair crop of fruit the second season. Because it costs so much to care for a plantation for a year, it will pay well to have the soil in a high state of fertility before the plants are set, so that the plantation may be brought into bearing a year sooner than would be possible otherwise.

In many sections no fertilizers are used on bearing plantations. In the older raspberry sections, however, some commercial fertilizer and stable manure are used, and it is considered profitable to use them. Stable manure, however, usually has given the best results and experiments have shown that, where obtainable, it furnishes the best means of enriching the soils on which the experiments have been tried. Stable manure not only furnishes some plant food but supplies large quantities of humus. If an annual application of about 10 tons per acre is made, the humus supply should be maintained, and with proper treatment in other ways, the field should be kept at a high state of productiveness. Some soils and some sections will need a larger quantity and some less than 10 tons per acre. A heavier application, however, should not be made unless it has been found by actual trial to be desirable, as it is possible to stimulate the growth of canes and leaves to such an extent as to reduce productiveness.

Cover crops may be used to maintain the humus supply. Oats seeded at the rate of 3 bushels per acre in late summer should give a dense stand of material to turn under before winter, or they may be left to serve as a covering during winter and plowed under in the spring. Cowpeas, veach, the various clovers, and other crops also may be used in the raspberry plantation. Care must be taken in growing the vetch and clovers, as they live through the winter and it may prove costly to eradicate them. However, if they are drilled in between the rows and turned under before they become too rank in the spring, little trouble should be erperienced.

QUALITY IN CELERY

The following from the Vermont Agricultural Experiment Station regarding quality in Celery is valuable:

Quality in celery is primarily a question of the proportional relationships of the so-called parenchymous tissue to the fibrous tissue; and this is determined in part by varietal differences and, within varietal limits, in the main by certain external conditions, such as soil moisture, plant food, rate of growth, light, warmth, pest control and blanching.

Celery contains 93 per cent. or more of water and its cells must be turgid if a crisp product is to be secured. A series of experimental trials wherein plants were grown in water or were given water in amounts ranging downward from 187 cc. to one cc. daily, resulted in no height growth, or, indeed, in shrinkage in height when 15 cc. or less were supplied daily, and increasing height growth when 31 to 187 cc. were used. Being a foliaceous plant, celery responds more readily to soil dressings of nitrogen than to other forms of plant food.

The character and the quantity of parenchymous tissue is determined by the growth rate, which, in turn, is governed largely by moisture and plant food opportunities. Slow or checked growths cause stringiness, and overrapid growth, an excessively elongated and stringy growth.

Light is an imprtant factor. Several plants were grown either in full light, in half ight or in darkness. Intense light hindered growth and lack of light caused an abnormal etiolated growth. The full-lighted crop was dwarfed, stringy and tough, the half-lighted crop was of good quality, and the no-light crop was long stemmed, watery and subject to disease attack.

Celery grows best in a cool temperature. In a series of trials a crop grown at approximately 89 degrees F., was shorter and far more leafy than one grown at 60 degrees F., but its quality was not injuriously affected.

Blanching, if properly done, tends to develop a "nutty" flavor; if improperly done, a bitter flavor. In either case, the chlorophyll is profoundly modified, or, indeed, destroyed.

"Pithiness" is characterized by lack of parenchyma. It has been shown at the Maryland station that this is due in the self-blanching varieties to heredity, to the propagation of an undesirable strain or to reversion, but that, in other forms, it is quite as likely to be due to unfavorable cultural conditions. Careful seed selection should to a large degree obviate this difficulty.—H. B. Norton.

Proper Feeding Pays

Yes—and handsomely, too. Here's what Mr. H. W. Corbett, of Annapolis, N.S., has to say about it: "I have a flock of Plymouth Rock pullets. I put five in a separate house and gave them

Pratts POULTRY REGULATOR

In February the five pullets produced 116 eggs, or 23 to 24 each. The other 30, without having Pratts, produced only 15 to 16 eggs each. I then fed the 30 Pratt's Poultry Regulator, and in 10 days my hens increased 50 per cent. in laying."

Could you ask for better proof than this?

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RED SPIDER

Practically all vegetables are subject to attack by the red spider. It is not a true spider but a mite, the latter name being indicative of its minute size. It is well distributed throughout the country.

Among vegetables and truck crops most attacked are beans of all kinds, cowpeas, eggplant, cucumbers, tomatoes, melons, squashes, strawberries, raspberries, beets and celery. It is also a greenhouse pest and does great damage to cucumbers and tomatoes, as well as to ornamental plants grown under glass.

It is a general feeder in the broadest sense, infesting the foliage of shade and fruit trees and some field crops. It is often present on the under surface of leaves like beans without being suspected. This mite injures plants by sucking the juices, and when plants are neglected their vitality is slowly reduced by loss of sap, and in time all of the plant's functions are deranged. In case of severe attack, millions of red spiders can be found on the foliage, and the webs which the insect spins from plant to plant can be easily seen, with the mites themselves passing rapidly over them and congregating in swarms. Sometimes the plants look as though stricken by fire.

The remedies are spraying with soap solutions, kerosene-soap emulsion, and sulphur preparations. Flowers of sulphur mixed with water at the rate of 1 ounce to 1 gallon sprayed over infested plants is of great benefit. Unless remedial measures are adopted early and applied as often as necessity demands, red spiders are almost certain to do great harm to delicate plants, since if the plants become thoroughly infested they seldom survive. Frequent spraying with soap and water will often keep the pests in check, especially in greenhouses.

ABOUT BEANS

Beans are more susceptible to cold than peas, and should not be planted until danger of frost is past and the ground begins to warm up. They are however, among the most desirable vegetables that the home gardener can raise. There are many different kinds and varieties of beans, but for garden purposes they may be divided into two classes, string and lima. Both classes adapt themselves to a wide diversity of soils and climate. They grow rapidly, and, therefore, leave the area in which they have been planted free for another crop. To secure a continuous supply it is desirable to make plantings at intervals of 10 days or two weeks from the time that the ground is reasnoably warm, until hot weather sets in.

Both string and lima beans are subdivided into pole and bush types. The pole lima bean shouuld be planted with from eight to 10 seeds in the hill, and after the plants become established, should be thinned to thiee or four. The hills should be four or five feet aprat. Bush lima beans are planted five or six inches apart in rows 30 to 36 inches apart. Bush beans of the string type may be planted somewhat closer—the plants standing three or four inches apart in rows from 20 to 24 inches apart, if hand cultivation only is to be employed.

Beans of any kind should not be planted any deeper than is necesary to secure good germination. This should never be over two inches, and on heavy soil it should ont be as deep.

BEE-KEEPING IN RELATION TO HORTICULTURE

An authority has made the statement "Nature abhors self-pollentation." When plants are cross fertilized the offspring are larger in size, grow more vigorously, bloom a little

Nitrate of Soda

Data as to increased crop yields due to the use of Nitrate are available. Why not make your business of crop fertilizing profitable by the use of Nitrate of Soda whose efficiency is known?

A bushel of corn or wheat or a bale of cotton today will buy more Nitrate and more Acid Phosphate than ever before.

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The best and latest mill for Cleaning and Grading all kinds of Seed and Grain.
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WEAK, AILING BABY.

No food agreed, and fast Wasting Away. But soon cured by Dr. Cassell's Tablets.

Mrs. Jarvis, Box 286, Penetang P.O., Ont., says:—"When only five months old my baby fell ill, and in spite of medical treatment wasted away till he seemed just skin and bone. I tried special foods, but none of them would stay on his stomach, and we never thought we should rear him. But one day I read about Dr. Cassell's Tablets, and got some for baby, and I am thankful I did, for they quite cured him. He is a bonny boy now."

A free sample of Dr. Cassell's Tablets will be sent to you on receipt of 5 cents for mailing and packing. Address Harold F. Ritchie and Co., Ltd., 10, M'Caul-street, Toronto.

Dr. Cassell's Tablets are the supreme remedy for Dyspepsia, Kidney Troubles, Sleeplessness, Anaemia, Nervous ailments, and Nerve paralysis, and for weakness in children. Specially valuable for nursing mothers and during the critical periods of life. Price 50 cents per tube, six tubes for the price of five, from Druggists and Storekeepers throughout Canada. Don't' waste your money on imitations; get the genuine Dr. Cassell's Tablets.

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THE WINTER TERM
of the
Fredericton Business College
opens on
Monday, January 7, 1918

Pamphlet giving particulars of our courses of study, rates of tuition, etc., will be mailed to any address os application.

W. J. OSBORNE, PRINCIPAL,
Fredericton, N. B.

earlier, and yield seed more abundantly.

Plants must spend their lives where they are developed from seed. They may not roam about like animals to seek their mates. Thus we have a partnership between bees and plants, between horticulture and apiculture, as decreed by Mother Nature.

This is seen by studying the shape of many of our common flowers. If we were able to ask a flower the puestion: Where is your nectar? Where is your pollen? And what is the path the bee must follow to get to the nectar? The answer would decide us as to the value of bees to our gardeners and fruit growers.

The bee is covered with thousands of small hairs. When it is gathering the nectar many of the little pollen grains adhere to these hairs and are carried to the next flower visited, where the pollen dust is often left on hte stigma of the plant. Thus the bee brings about the cross fertilization so necessary with many of our plants.

Another fact that strengthens the relationship is that when a bee commences to take her load of nectar from a certain variety of plant, say white Dutch clover, she will complete her load from this plant, often going by a large thistle or other plant well filled with nectar. This seems to be a provision of nature to prevent the hybridizatioo of plants of different varieties.

The up-to-date horticulturist or gardener makes sure that there will be bees in the vicinity, not because he is interested in the production of honey, but because he knows that without bees he can not rgow so much fruit. If any of you have any doubt on this point let him enclose a limb of a plum or cherry in a bag of mosquito netting just when the branch comes into bloom. If his experience is the same as it has been with others who have tried it, he will find that on the covered branches which thebees cannot get at, the blossoms will not yield over five per cent. of fruit. The branches that are free to the visit of bees and other insects, other things being equal, will yield their full amount of fruit.

GROWING PEAS COMMERCIALLY

The two drawbacks to growing garden peas are picking them and finding the proper variety to plant. Where any quantity is lpanted they are best given out for picking by the basket, and then the picker will hustle and not loaf on the job, for it is tedious work. If you do not want to put on extra labor, three can pick the crop every ten days or two weeks ,that one bushel will sow, and keep up with the other work, if the plantings do not last over six weeks.

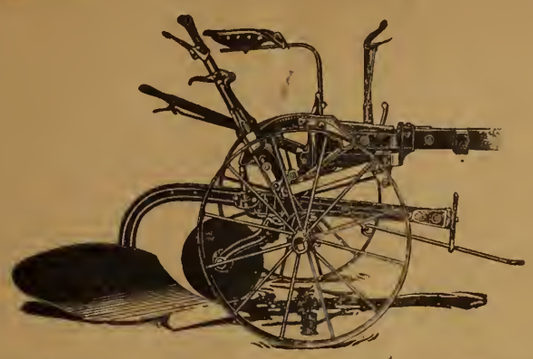
To pick right the vines must be mature and pulled up for the first and last picking. If handled twice and the pickers have to crawl amongst the vines poor headway is made. The variety we plant and recommend after many trials and kinds is Thomas Laxton. It is very productive, not subject to mildew, withstands the ravages of the pea lice, and is large podded, therefore fills the basket puickly.

Picking is done in ⅝ bushel baskets. The past season good peas brought not less than 90 cents wholesale, and up to $1.50. These are considered fine prices.

We plant peas so as to hand weed them, which takes two hoeings with a double-whel hoe. The rows are drilled with the marker set for "peas" 14 inches apart. This variety grows about 30 inches high, and with this distance apart they support each other. Plantings are made 10 to 14 days apart.

When about six inches high they are wheel cultivated with the cultivator knives. The second cultivating is done just as they are ready to topple over, and the small plows are used to pull the dirt to the peas on each side. This is all that is necessary even in the weediest ground.

The best peas we raise are grown on ground that is manured from poultry houses and litter from the floors. You can see the difference when planted side by side, using chicken manure for one and stable manure for the other . They fill up nicer, taste better and are more prolific grown on the poultry manure.—C. Van Horne.



HAMILTON PLOWS
FOR LONG HARD SERVICE

It takes a real plow to make good with the plowing experts of Eastern Canada. Therefore, we take pride in the fact that the Hamilton No. 126 sulky meets with their approval.

It is adjustable to all conditions. It is easy to operate. It is built to do first-class plowing for many years. Note the handy pole shift. With it you can instantly change the landing of the beam, straighten crooked furrows, adapt the plow to side hill plowing and to the turning of short corners.

The Hamilton 126 is a two-wheel sulky with a horse lift—a simple type that is remarkably easy to operate. The horses do practically all the work, yet the draft of the plow is so light that they do a full day's work with it.

The Hamilton line also includes tractor plows, walking gangs, two-way plows, and a choice assortment of walking plows. All are made with the thoroughness you will find in the 126 sulky. Note the new spring beams and long handles of the walking plows. Write us for Hamilton plow folders.

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BRANCH HOUSES
WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.
EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

BEST SPRAY FOR SCALE PESTS

I have been a constant user of lime-sulphur from the time it came into use, both as a dormant and as a sumner spray. Two years ago I changed and began to use scalecide as a dormant spray, which, of course, is the only thing the manufacturers recommend it for. After a thorough trial under varying conditions I find it will do all lime-sulphur will accomplish, also do what lime-sulphur will fail to accomplish. My orchard was full of canker, but with this spray I have practically cleaned it out the past two years.

All New England orchards are infested with this pest more or less and the recommended method of combating it is to cut out the canker. Woolly aphis is another troublesome pest, also green apple aphis, causing serious injury to young trees. I have seen nothing of these pests to speak of the past two years. This spray seems to inject new life into a tree, especially young ones. My young orchard of 500 trees I am bringing up on the spray. They say it will kill trees, but if that is the way it does it, by growing them the way my orchard is growing, I only wish I had used it 10 years ago.

When I used lime-sulphur for dormant spray it took from 13 to 14 barrels to go over my large orchards. It only requires four barrels scalecide. The wonder to me is that more fruit growers do not use it. I suppose they have been told at some time by a lime-sulphur agent that it would kill the trees. If given a trial, I am confient it will prove its superiority over lime-sulphur. Even if it did not more than lime-sulphur, the pleasure and satisfaction of handling it as compared with the sulphur compound would be in its favor.

Of course, we must have lime-sulphur or sulphur compounds for summer operation. I have made a thorough trial before recommending scalecide. If there is anything better than I am using I want it. The best is none too good for me. I have too much at stake not to have the best.—C. T. Holman.

WATER-CORING OF APPLES

Water-coring is most frequently found in Baldwin, Northwest Greening and Gravenstein. Leaving the fruit on the trees too late, thus allowing them to become overripe, causes water-coring. It is believed that this is due to cool weather checking the respiration from the leaves, while the roots continue to absorb a large amount of moisture. The fruit in consequence becomes overloaded with moisture.

Storage of apples in this condition has been found to entirely eliminate the water-coring. Water-cored apples after three months storage were discovered to be quite normal and possessed good keeping qualities.

Farming is a money-making business. When studied as other great enterprises are, and placed on a scientific basis, it will become the safest and most remunerative of all occupations.

The farmer owes no higher duty to the boys and girls, and to society in general, than to place at their command literature discussing farm topics.

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CASH or CREDIT
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DAIRYING.

ANOTHER WORLD'S RECORD FOR CANADA

The Holstein-Friesian cow, Zarilda Clothilde 3rd DeKol, owned by Colony Farm, Essondale, British Columbia, has just completed an official test for one year that entitles her to rank as a world's champian milker. This cow was under the constant supervision for the whole year of a representative of the Provincial Department of Agriculture, who watched, weighed and tested every milking. Her production was 30467.3 pounds of milk and 1071.-34 pounds of butter. This milk record is the largest ever made by any cow in the world under official test. The former champion was Forward Somerset Duchess with 28540.1 pounds of milk.

Holsteins Win the Dairy Tests

At the recent Ontario Provincial Winter Fair the championship prize in the dairy test, seventy-four cows of all breeds competing, was won by a purebred (but unregistered) Holstein cow owned by Earl Grier, Woodstock, Ontario. This cow produced in three days 219.1 pounds of milk testing 4.3 per cent. fat. Mr. Grier also exhibited two other grade cows giving nearly as much milk, one of which averaged 4.6 per cent. and the other 3.9 per cent. Anyone who saw these cows could not help but be convinced of the great value of a good Holstein bull at the head of a working dairy herd.

At the dairy tests held in connection with the Fall Fairs in various parts of Canada the Holsteins again made nearly a clean sweep, winning first place at Calgary, Alta., Lloydminster, Sask., Renfrew, Ont., St. Scholastique, Que., Stratford, Ont., Sherbrooke, Que., Quebec, Que., Charlottetown, P. E. I., and Duncan, B. C.

Record Prices for Holsteins in Great Britain

Among dairy cattle breeders and dairymen farmers in Great Britain, the present chief topic of conversation, apart from the war, is the wonderful prices being realized at public sales for the black-and-white dairy cattle. Commencing in July, there have been a number of prominent herds either dispersed or reduced, mainly owing to shortage of labor; in one case, three sons, who together with their mother had succeeded in building up a great show and producing herd, all having answered the colors. Some of the outstanding features of these sales were: the strong demand for the best, the even distribution of the cattle, which were scattered from the extreme north to the south of England and parts of Ireland; the number of new adherents to the breed, whose names figure in the list of purchasers; and the increased attendance of women around the ringside, who, in many cases, were among the top buyers.

On July 24th, fifty-two head owned by John Bromet, a breeder of high repute at Tadcaster, Yorkshire, were sold for an average of $1.150 per head; top price of $8.500 being paid for the bull, Botermijn, bought by Mr. Bromet in 1914 for $2,550. Mrs. Putnam, a lady enthusiast, paid top price for females at this sale, securing Garton Fullpail, a show cow and a splendid producer, for $3.000.

The next important sale took place on August 7th, when the herd owned by Major D. A. Spence, Kincardineshire, Scotland, was dispersed, 77 head bringing an average of $310, 16 cows averaging $340 each. August 18 saw the reduction sale by A. Munro at Dell of Inshes, Inverness, when 43 females averaged over $940 per head, $4,000 being paid for the bull Hollander, (the purchaser receiving an offer of over $5,000 for his bargain;) $5.000 for a four-months old son of Hollander; $4,100 for the cow, Dell Eeke 3rd, and a number of other young females going for well over $1,000 each.

The upward trend in prices for good specimens of the black-and-white breed continued and on September 28 the Duchess of Hamilton's Rochford herd was dispersed at Easton, Wickham Market, Oxford. At this sale five bulls sold at an average price of over $1,300 each; 74 cows and sheifers averaging $950. The bull, Johan, was sold for 3,900 and for possession of the cow, Joukje, the bids waxed fast and furious until she was knocked down at $8.250. This animal was described as a magnificent, typical, well-bodied, heavy-milking young cow, with depth and vessel, her milk record for 295 days, with first calf, being 996 gallons. A month-old daughter of Joukje brought $5,250 and a yearling daughter (full sister to the first) was also sold for $5.250. The imported bull and heifer (Johan and Joukje) cost the Duchess of Hamilton, in 1914, $1,425. They and their produce realized in the sale $23,400.

During the month of October, further evidence of the demand for Holsteins was forthcoming at the sale of surplus stock held by A. and J. Brown, owners of the noted Hedges Farm herd at St. Albans, near London. Fifty-nine head were sold at an average price of over $1.200 per head, four bulls averaging around $4,750 each. The top price was $12.500 for the yearling bull, Hedges Second Series, his sire being also sold for $5.000. Seven cows and heifers were sold at prices ranging from $1,000 to $1.500 each.

Commenting editorially on the tremendous interest that has arisen in Great Britain in connection with the Holstein breed, the Live Stock Journal of London said in a recent issue: "There seems to be no limit to the prosperity of the Holstein-Friesian, for, after beating all records for any dairy or dual-purpose cattle sales in this country by the averages received at Mr. Bromet's sale at Tadcaster, Mr. Munro's herd at Dell of Inshes, Inverness, showed an average of £172 1s 4d (over $850 per head.) The progress made by the black-and-white breed is phenomenal to the partisans of the breed, who openly boast there has been nothing quite like it in the whole history of pedigree stock breeding. Who, they ask, six years ago would have imagined that the Holstein-Friesian would beat the dairy Shorthorn in the matter of herd averages at sales? Who, they also ask, would have dreamed that the number of breeders would be multiplied by twelve, and who would have thought it possible for a calf of this breed to realize 1.000 guineas at public auction? Yet all these things have actually happened, and it is asserted that had a certain telegram been delivered before the close of the proceedings at Dell of Inshes, the average for the whole sale would have been higher." This was written before the sale of the Hedges Farm surplus stock, when an average of over $1.200 was reached with a top price of $12.500 for a yearling bull.

FARMERS SHOULD TEST THEIR HERDS FOR TUBERCULOSIS

The opinion seems to be growing amongst consumers of animal products that disease, in these farm commodities, is becoming more prevalent today than in former times and that there is real danger in their use.

In earlier days, when cattle were kept under different conditions and there were no restrictions and none of the modern means of testing animals that we have today, very little notice was taken of these things. If a cow or steer was taken sick and died, they were buried and forgotten in a few hours. Today, one wants to know the cause; investigations are instituted, post-mortem examinations are made, and the whole proceeding is common talk of the public street, the club, and the newspaper. On this account, whether disease is really proportionately greater or not, it is much more commonly talked of and feared.

Since it is now known that there are some insidious diseases in our midst, which are more or less dangerous to the health of the community, it should be the aim of every stockman to be on the lookout for any signs of -I Iy.nnmnthooooooooo shrd etain shrdl these conditions and to so protect themselves that they will be able to eliminate it before it has gotten a strong hold in the herd.

Of all the diseases that are to be most feared and dreaded in this country, at the present time, none is so much in the public mind as that of tuberculosis. The apparently unfortunate thing about this disease is the fact that a herd may be badly infected with it and yet show no symptoms that would lead one to suspect its presence. Fortunately, however, a test has been discovered whereby one may locate the disease if it is present in a herd without the need of slaughtering the animal. This is known as the tuberculin test. It is not expensive and can be applied by any intelligent and careful stockman.

As matters stand today with reference to this dreaded disease it looks as though farmers and particularly breeders of pure bred cattle, were missing an opportunity to rid themselves of this scourge by not applying this test regularly and systematically to their herds. This is not being done, at least, to any great extent. True, there is here and there one who is profiting by this opportunity but they are greatly in the minority.

A leading stockman came into the office of the Maritime Farmer recently and in the course of a conversation stated that he had not banked any money for some time, but had used all his available cash to build up his herd, and in further discussion admitted that he had done no testing. Now, it is quite possible that this breeder's herd is absolutely free from tubercular infection, but on the other hand it may also be possible that many individuals of the herd have tuberculosis, even in an advanced stage. If this herd were to be inspected now and found to be badly infected with the disease, think of the great loss it woul be to him, after having spent practically all his savings for several years in developing this herd. In many cases the result would be so serious that the owner would be crippled for the rest of his natural life.

Now the thought that we want to impress upon the minds of our readers is the fact that there is no good reason why any man should be caught in that position. Now that the tuberculin test is comparatively cheap, easily applied and considered reliable, no man should think of building up a herd without knowing exactly where he stands in this matter.

In starting a herd one should refuse to purchase anything but a tested animal, and by this we mean not an animal tested years before, nor even a year before, but right at the time of purchase, for the simple reason that a cow may be free from the disease to-day, and in a year from now be badly infected. Not only should one start right by purchasing tested animals, but in order to be sure of his ground, he should apply the test to every animal on the farm and clean up anything likely to cause trouble. This having been done, the breeder's next duty should be to test his herd once or twice a year so that no advanced stage of the disease could ever be reached, before he would be apprised of the fact, and be on the job at once to overcome it. Any animal that reacted could then be turned off for beef before the disease had progressed far enough to render the meat unfit for use.

By following out some such system as this one could protect himself against this insidious enemy and preserve his herd in a state free from serious invasion; and not only so, but by this process of elimination, all animals more or less pre-disposed to the tubercular germ would sooner or later be expelled from the herd and a lot stronger and better able to resist its ravages be gradually secured.

There is no doubt but that the indiscriminate buying and selling of animals, both in the sale ring and on the farm without being tested to determine the state of health that an animal is in at the time of the transaction, is the greatest contributing factor of anything toward the spread of tuberculosis.

Now that this question has been before the public for so long, and has been discussed from all angles, it is up to the farmers to adopt some radical measures to protect themselves from the scourge of the dairy and other herds of the farm.

There was a time when the farming community did not know the disease, or realize the dangerous character of it; but this fact cannot be offered as an excuse today by any intelligent agriculturist, and to ignore the fact of its presence and thus invite disaster in the herd is surely not only a most unbusinesslike proposition but a practice altogether inconsistent with moral principle and business etiquette.

The time has come when every dairyman should make a determined effort to stamp out this disease germ from his herd. It is no good for any man to disclaim responsibility in this matter by saying that individual effort is useless, so long as the great majority are indifferent to the cause. Reforms are never brought about by majorities. It is by the individual, here and there, taking higher ground; and by continued and successful effort forcing others to do the same or to pack up their grip and move on to other velds of enterprise.

Individual effort will at least lift one's own herd out of the quagmire and put it upon the solid rock of permanent improvement and worthy ambition and at the same time it cannot fail to influence some other fellow to step out in the right direction and reap the benefits of the more progressive and practical pioneers of a noble cause.—O. V. J.

BUTTER NOT COMING

We are having trouble with our cream We cannot get butter. It is sour and thick when we churn at from 60 to65 degrees. There seems to be butter on the top, but it only frothhs. By letting it stand cold, it hardens into chunks like butter. Then if taken off and put into cold water and churned it will melt away.

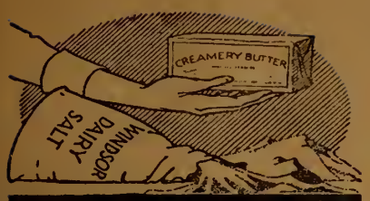
Leeds. Co.

Difficulty in shurning is usually due to one or more of the following causes:

1. The cream may be too cold, too thin, or too thick.
2. The churn may have too much cream in it.
3. The cream may have been kept too long.
4. A farrow (or stripper) cow's milk may be causing the trouble.
5. The feed may be too dry.

The above rules are given by Prof. Dean of the O. A. C. Guelph. You may discover in them some reason why your butter does not come.

We think your cream is too thin, that you are churning at too low a temperature, and that it may have been kept too long. We advise trying it at 70 degrees, and if it does not come in a reasonable time let it stand until the froth gathers on the top; then draw off the buttermilk and churn again without adding any water and you will surely get the butter to gather unless the trouble is from cows too far on towards freshening or is of bacterial origin—the cream standing too long, etc.



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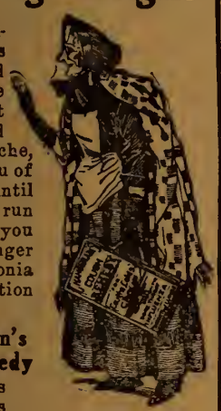
Made in Canada

THE CANADIAN SALT CO. LIMITED 223

Hacking Coughs



For hacking coughs—the kind that make your throat sore and your head ache, that rob you of your sleep until you are so run down that you are in danger of pneumonia or consumption—take

Chamberlain's Cough Remedy

It soothes and heals the inflamed air passages, stops the tickling in the throat, and by its tonic effects helps you to throw off the disease.

Chamberlain's is quite different from the ordinary cough medicine, for it not only soothes but also heals, restores the affected parts to a healthy condition. I believe it is the best and most reliable preparation ever produced for coughs and colds.

Yours for Health.
—Granny Chamberlain.

30

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Box 504 Huntington, Que.

Minard's Liniment Co., Limited.

Gentlemen,—Theodore Dorais, a customer of mine, was completely cured of rheumatism after five years of suffering, by the judicious use of MINARD'S LINIMENT.

The above facts can be verified by writing to him, to the Parish Priest or any of his neighbors.

A. COTE, Merchant.

St. Isidore, Que., 12 May, '98.

FOOD VALUE OF SKIMMED MILK

As a contribution to the high cost of living discussion, Professor James O. Jordan, head of the Boston health department, offers the suggestion that more skimmed milk should be used. He has issued this statement:

"At this time, when the high cost of food materials must be seriously considered by householders, the employment of skimmed milk affords a means of appreciably reducing living expenses. This product may be obtained at nearly half the price of whole milk, and may be used in the place of the latter as an addition to food materials with great advantage where price must be taken into account.

"Skimmed milk is a useful and economical food, but its value is not generally recognized. It should be used more extensively in place of whole milk in many culinary operations. For this purpose it cannot be too highly recommended. By its general employment human beings would need less of higher priced foodstuffs for their nourishment than is necessary where skimmed milk forms no part of the diet.

"Skimmed milk furnishes protein at about half the outlay for which this essential can be purchased as milk; it is also a valuable source of carbohydrates and mineral water. The deficiency of fat in skimmed milk is counterbalanced by the fat of the ordinary mixed diet.

"The general use of skimmed milk for cooking purposes in place of whole milk would have a further advantage than the immediate reduction of the size of the family milk and food bills. It would tend to relieve the present shortage in the milk supply, and, as les whole milk would be required by the community, a condition would be created which would hasten the lowering of the price of butter, cheese and other milk products. It is not advisable, however, to give skimmed milk to children under five years of age, as they should be given whole milk of the best quality."

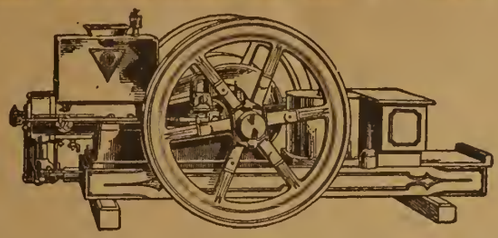
"TOO MUCH BOTHER"

Cy says there's one thing about it—he's just going to quit keepnig Holsteins. Says the pesky things get up at the most outlandish hours—middle of the night about, to be milked, when no hard working careful citizen ought to be expected to be anywhere but in bed. Then they persist in giving down such a lot of milk thatit tires a fellow to death to sit on a stool and catch it and actually takes nearly a year to dry the critters off. Cy said that he had one that wouldn't go dry anyway, so he gave her to a neighbor rather than be bothered any longer. And then before a man could rest up after such exertions, it was milking time again with the stock at the gate all bellowing and leaking cream, as sure as you're born . He says he won't stand for it any loger Says he's got a chance to trade his six heifers for 15 Jerseys and their owner says he'll guarantee thewhole bunch won't give as much as three of the black and whites. Cy says there's some things on earth besides Holsteins and money and if he's got to dairy it, he prefers a breed that don't take up a man's whole time. 'Each to his own taste," as the old woman said when she kissed the pig.—Holstein Freisin News Buletin.

RECORDS HELP SELL BREEDING ANIMALS

The present sharp competition in dairy business and the increased price of feed force the successful dairyman to secure the greatest return possible from his outlay. If he has registered cows he expects more for his progeny than if he had only grades. But to obtain more and enough more to pay to keep purebred stock, L. W. Wing, Jr., of the Missouri College of Agriculture, reminds the dairyman that he must be able to answer the following questions from the prospective buyer of a herd sire. Is the sire registered? What is the record of his dam? How many advance registry daughters and proven sons has his sire? And what are the records of his grandams and grandsires? If the breeder is selling a registered cow he must answer: What is her record; the record of her dams and grandams, and the ability of her sire and grandsires to produce advance registry daughters and proven sons?

To answer these questions and meet the demands of thebuyer the breeder of purebred dairy cattle must do official testing. This testing is under the supervision of the various colleges of agriculture. Breeders ready to take up this work or wishink further information should write to the dairy department of the college of agriculture.



Think of all the work this

ALPHA GAS ENGINE

would save you

WITH this simple, strongly built engine you can saw wood, run a pump, cream separator, churn, washing machine, feed cutter or feed grinder, and save time and labor around your farm.

If you need a gas engine, it will pay you to buy a good one. An ALPHA costs little more to begin with than a cheap, poorly designed engine, and will quickly make up for any difference in the first cost by the longer and far more satisfactory service it will give you.

The ALPHA is simple and durable in construction and is free from any of the complicated, delicate parts that make some engines a constant source of irritation and expense. You can operate it with either gasoline or kerosene, and it will develop its full published rating with a minimum amount of either.

An ALPHA is a saving investment any way you look at it. It will save the money you now must pay out to get done work that requires power, because you can own and operate it for less than it would cost you to hire some one with an engine, and it will do quickly work you are now doing by hand and give you more time to attend to other work. The sooner you get an ALPHA, the sooner it will pay for itself.

Ask for catalogue, prices and complete information. Made in eleven sizes, 2 to 28 H. P. Each furnished in stationary, semi-portable or portable style, and with hopper or tank cooled cylinder.

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Buttermakers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

If a silo has a good roof and the windows, ventilators, and chute are kept closed, freezing will be held down to a minimum.

The more coarse bedding used in the stall the greater the amount of manure.

The cows should at all times have access to salt and plenty of clean, fresh water.

PULVERIZED LIMESTONE

SWEETENS THE LAND AND PRODUCES HEAVY CROPS

The demand last season for our "Clairmont" Brand Pulverized Limestone was so heavy we were unable to fill a great many orders. We expect a very heavy business for 1918 and would advise all booking now and getting their supply early. Our Limestone is showing wonderful results.

—Manufactured by—

C. H. PETERS SONS, LTD., St. John, N.B.

Works at TORRYBURN, on C. G. R.

NEVER NEGLECT
BRONCHITIS
IT MAY TURN TO PNEUMONIA.

Bronchitis comes from a neglected cold, and starts with a short, painful, dry cough, accompanied with rapid wheezing, and a feeling of oppression or tightness through the chest.

You have, no doubt, wakened up in the morning and have had to cough several times to raise the phlegm from the bronchial tubes, and have found it of a yellowish or gray, greenish color, and you have received relief right away.

This is a form of bronchitis, which if not cured immediately may turn into pneumonia or some more serious trouble.

Cure the cold with Dr. Wood's Norway Pine Syrup and thereby prevent bronchitis and pneumonia taking hold on your system.

Mr. E. Jarvi, New Finland, Sask., writes:—"I was troubled, for years, with bronchitis and could not find any relief. I was especially bad on a damp day. I went to a druggist, and asked him for something to stop the cough and constant tickling in my throat. He gave me a bottle of Dr. Wood's Norway Pine Syrup, which I found gave me instant relief. I think it is the best medicine for bronchitis I know of. Now I take care I always have a bottle of it on hand."

Do not accept a substitute for "Dr. Wood's." It is put up in a yellow wrapper; 3 pine trees the trade mark; price 25c. and 50c.; manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

LIVE STOCK.

THE TALE OF A GROWING PIG

If you want to burn the road,
Buy a pig
If you want to raise the load,
Buy a pig
O, he's little, but he's wise,
He's a terror for his size,
And he's quick to advertise—
Buy a pig.
If you want the cheapest board,
Buy a pig.
If you want to own a Ford,
Buy a pig.
He is solemn but he's fat,
And he knows just where he's at
And he always comes to bat—
Own a pig.
O, it's really somewhat hard—
Keep a pig.
That he has to end—in—lard
Keep a pig.
He makes sausage ham and sich,
Pickled feet and bacon fillitch,
And he makes his owner rich.
Keep a pig!

SKIN DISEASES AND PARASITES THAT TROUBLE THE STOCK

We know of no better remedy for killing blue lice on cattle than hellebore and cement, one part of the former to four parts of the latter. Both of these ingredients should be fresh and free from lumps, thoroughly mixed and sifted over the animal from head to tail on each side of the spine, with an old tin pepper box or a small tin with holes punched in the lid.

Before the preparation is applied the animal should be thoroughly cleaned with a currycomb so that the hair will be loose and dry, in order that the mixture will readily work down to the skin.

One application, if carefully done, will usually clear the lice off a herd of cattle, but to make sure a second application should be given a week or ten days later. This remedy is very cheap, easily applied and effective.

We havc never tried the hellebore and cement for horses but if we had a case on hand we would not hesitate to do so, since it is so easily applied.

The common remedies for horse lice are: Two pounds of tobacco to three gallons of water steeped for two hours. Sponge the animal thoroughly.

Another remedy is 3 pounds of quassia chips to one gallon of water, steeped for two hours and applied as the foregoing.

The questoin of keeping the herds and flock clear of skin diseases and parasites s one worthy of a great deal of attention. There are thousands of herds throughout the countfy that are rendered unprofitable by reason of the depredations of these diseases. No herd can be at its best when tormented by destructive parasites. Not only do they feed upon the life blood of their victim but at the same time so annoy and distress them that a nervous condition is excited in which it is impossible for an animal to make the best use of its food and other things calculated to improve its condition.

Of all the parasitic diseases that infest cattle, horscs, pigs, sheep or poultry or any other domestic animals body lice is the most common. All classes or animals seem to have thcir own peculiar kind, and which do not usually stay on any other class for any length of time. Herds that are affected with this class of vermine usually show it in the appearance of the hair and in their generally unthrifty condition.

There seems to be no good reason why these insects are allowed to reproduce this species and perpetuate their destruction. It is difficult to exterminate. It is more likely to be a matter of carelessness or inefficienecy on the part of the attendant or the porprietor. Lice may be on a herd of cattle in small numbers for some time if the stock is wel fed, and on this account, even though a herd may look thrifty they should be carefully examined at frequent intervals to see that no skin diseases are present.

It sometimes happens that one or two animals in a herd will become badly infested with lice while the balance of the herd will be comparatively free Where this is the case they will generally show it by their rough hair and their condition. Anything of this kind should be a warning to the herdsman to make a careful examination but as previously noted no one should wait for the sign of disease to make its appearance, but ever be on the watch against any such insidious enemies.

At this time of the year and from now until the grass comes again, parasitic diseases are more common than in the summer time and hence every care should be exercised to be informed of any new epedemic of the kind, and measures at once adopted to overcome it

Some kinds of lice infest the whole building where they are present on the stock, and when this is the case nothing short of a thorough cleansing with some reliable germicide will effect their extermination. Hog lice and poultry lice are of this nature, particularly the latter, which will even annoy horses for some time.

Let every stockman at once take the hint, and examine his herds for lice, mange, ringworm and other skin diseases, and so save much loss and troouble later on.

TRANSMISSION OF PRODUCTIVE POWERS

"Holstein Breeder," writes: "Can you tell me whether the ability to produce butter-fat is transmitted by the dam or sire in the breeding of dairy cattle?"

We recall an exhaustive experiment conducted in the United States with the object of solving the above problem. The plan used was to take bulls havng advanced registry daughters and pick out those daughters which had different advanced registry dams . If then a difference was found between the daughters, it must be attributabe to the dams, since the sire would remain the same in each case. When two daughters were found by the same bull the higher and the lower producer were compared. When

Will Gold Dust dissolve the grease?

Yes! And to discover how *quickly* Gold Dust dissolves the grease make this test. Take a batch of dishes—greasy ones. Wash them with Gold Dust, following the simple directions on the package.

See if Gold Dust doesn't remove the grease with surprising quickness. See if you don't save time.

Try *one* package of Gold Dust. See if you don't find it a superior cleaner for all dirt that you can't brush up or sweep off.

But look closely that it is Gold Dust you *really* get. It is for sale everywhere in large and small packages.

GOLD DUST
The Busy Cleaner

Made in Canada

THE N.K. FAIRBANK COMPANY
LIMITED, MONTREAL

In Cutting Down Food Bills

remember that Purity Flour goes further---makes more bread, rolls, cakes and pies to the barrel and is also rich in body-building qualities. Its use is real economy. Give it a trial in your own home.

PURITY FLOUR

More Bread and Better Bread---and Better Pastry, too.

5

three daughters were found, the highest and the owest were compared and the third discarded; and when four were found, two comparisons were made possible. In every case an even number of daughters was used, except when two or more had the same dam, in which event the records of all out of the same dam were averaged and eartted as only one animal.

A total of 384 daughters having tested dams was found, which allowed of 192 comparisons. In 110 cases out of 192 (57.3 p. c.), the high producing daughters were from dams with the higher records. The average fat production was as follows:

	Pounds
192 low producing daughters..	435.88
192 high producing daughters..	548.10
Dams of low producing daughters	473.50
Dams of high producing daughters	500.57

The influence of the dam on fat-production is evident.. Compiling the data in another way we have:

	Pounds
192 low producing dams.....	428.07
192 high producing dams.....	546.22
Daughters of low producing dams	482.86
Daughters of high producing dams	500.61

While there is a difference of 118 pounds of fat between the high and low producing dams, there is a difference of only 18 pounds between the daughters. This indicates that the sire also has something to do with the inheritance of dairy quality.

By dividing the dams into two groups regardless of the bull to which they were bred, placing in one group all cows producing 500 lbs. or more and in the other all producing under 500 pounds, we have the following:

Number of dam, producing 500 pounds or more.....	132
Number of dams producing less than 500 pounds.....	252
	Lbs. Fat
Average of high producing dams	599.05
Average of low producing dams	428.53
Average of daughters of high producing dams	532.87
Average of daughters of low ducing dams	470.18

All the methods of comparison strongly indicate that fat-producing ability is inherited from the dam as well as from the sire, and that the practice of retaining heifer calves from the best cows for replenishing and building up the herd is sound. The fact, sometimes observed, that with poorer quality cowe and selected bulls high producing daughters have been obtained, must be chiefly considered as an exception which should not be made the basis in the selection of dairy cows for increased milk production.

Saves Shortening

One of the first things you notice, after "Beaver" Flour comes to your house, is that you are using *less shortening* than you used with western spring wheat flours.

You also notice that the Pie Crusts, Cookies and Doughnuts are lighter and flakier—that the Bread Rolls and Biscuits have a delicate flavour, a delightful, nut-like, homey flavour that is doubly welcome after the tough, almost tasteless bread you used to make with western spring wheat flours.

BEAVER FLOUR

Milled of Blended Wheat

is really two flours in one, for two kinds of wheat are used in blending. "Beaver" Flour contains the choicest Ontario winter wheat, strengthened with western spring wheat.

This gives you the finest pastry flour that can be milled—with the right strength to make a good size loaf of bread or a big pan of snowy Rolls.

More than that, everything made of "Beaver" Flour has a deliciously appetizing, nutlike flavour that is entirely lacking in the strong, western spring wheat flours.

Try it yourself—see how you save shortening—see how you come to depend on the even strength and quality of this famous flour—see how everything tastes so much better. Your dealer should have "Beaver" Flour—or will get it for you.

DEALERS—write for prices on Feed, Coarse Grains and Cereals. 199

THE T. H. TAYLOR CO. LIMITED, - - CHATHAM, Ont.

NURSING SICK COW BACK TO HEALTH

Many times an attendant in preparing a meal for a sick cow places it before and pays no further attention to it other than to observe from time to time whether or not it has been eaten. Sometimes this meal consists of a bran mash or thin slop. Such feed quickly starts to fermentin warm weather and, if the patient does not eat any of it within one or two hours after it has been placed before her, it should be removed. The sight of food continually has the same effect on cows under some conditions as it has upon human beings, causing them to become nauseated.

A sick person usually relishes a change of diet, something fresh and appetizing, some fruit or vegetables of some kind. In this respect a cow does not differ from human beings.

When it is seasonable, young corn plants are sometimes relished by our patients. Always remember that the appetite may be greatly stimulated at times by the use of some fruit or vegetables or other appetizing substances which cows relish. Be careful lest you overfeed the patient after she starts eating.

In preparing mashes or thin slops do not fail to salt them well and do not feed them too hot nor yet too cold.

If the patient is greatly weakened a drench composed of five or six eggs well beaten up and placed in a quart of sweet milk may be given two or three times each day.

A tea made by steeping bright alfalfa or clover hay may be offered to the patient. The hay should be cut up well with shears and packed in a large pail, after which boiling water is poured over it and the pail covered with blankets. This is allowed to stand for acouple of hours after which the liquid is poured off and offered to the patient just slightly warmed.

Only the best quality of feed obtainable should be offered to the sick animal and care should be taken that she be not overfed Fresh and pure water should be before the patient constantly.

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309 Windsor, Ont.

FORESTALLING THE PARASITES

The common louse, the sheep tick and certain diseases that may be prevented, like cattle mange and black leg, take a large annual toll from the live stock industry Animals that die of diseases that need not have attacked them had due precautions been taken, and animals that are unthrifty because the mange parasite is burrowing under the skin or the louse is getting in his work on the outer side of the cuticle, represent a waste in food materials and human energy that is undesirable always, but particularly so at this time when both food stuffs and labor are available only at a heavy premium. The measures to guard against loss from the causes mentioned are so simple that one forgets sometimes to take them. They consist chiefly in thoroughly cleaning out and idsinfecting the stables before the cattle are brought in and the use in their proper place of such common remedies as lime, creolin, raw linseed oil, kerosene, crude oil, sulphur, and a little oil of tar. The diseases that cause the heaviest losses in live stock and the causes generally of lack of thrift in animals,may be cured or remover by very ordinary means. But the remedies have to be applied in season, and right now is the time to thoroughly disinfect the buildings the stock go into and take action to forestall the winter activity of the hog and cattle louse, the sheep tick and the less widely known pest of the Scaroptidae family that produces the cattle range.

Much can be done toward the conservation of the resources of the farm by careful use of the by-products and the utilization of feeds that would ordinarily be allowed to go to waste.

METALLIC
SKYLIGHTS & VENTILATORS
METALLIC ROOFING Co
LIMITED
TORONTO, CANADA

THE HORSE

YOUNG HORSES ARE SOMETIMES SPOILED THROUGH OVERWORK

It is sometimes a test of patience and tact to get the young horses well started off in their first year's work. No two horses were ever alike, and each must be broken in differently. A rule for breaking in that would work well with one horse might cause the other to acquire bad habits or a breachy disposition that would greatly lower his value. The first thing we must consider is the disposition of the colt to receive our teaching. It is not proper nor economical to begin training the colt for work any great length of time before he is needed for work, but should allow him to understand from the first that business is business, and this will make him easier to teach when working time comes.

Horses acquire more bad habits a few weeks after they begin work, when their working habits begin to become settled, than at any other time. Make them work well, keeping to the rule, "Business is business." Many horses pull well to a buggy but balk at a small load when worked to a wagon, the result of habits acquired when they started working.

It is much easier to overwork the young horse than many think. Of course, the young horse is stout and able, and might do more work than an old horse if all his energy were expended on draft. But we must not expect this. The young horse is excitable and will waste energy in excitement that the other horse would use in pulling. The colt is also full of animal spirits, and will waste a very great deal of energy in prancing and high stepping. We can and should prevent a great deal of this, but we are likely to excite the horse in doing it, and cause a loss of energy on that score. However, we can allow for this waste of energy and still not overwork the horse. We should understand the draft of any machine, plow or vehicle to which we work the horse. The young horse should not be allowed to work himself into a sweating and frenzied exertion. Treatment of this kind makes the horse nervous at best, and may injure him beyond repair.

The way the collar fits has much to do with the work the horse does and the working habits he acquires. The collar should fit tight and conform to the shoulder of the horse by wetting it the first time we use it and allowing it to dry while he is at work. The hames should fit the collar well, but not to draw it together. Sweat pads are a bother and an irritation. The draft should not be too low at first, for the young horse holds his head high. It may be gradually lowered as the horse settles to his work.

MAMMITIS — UNTHRIFTY HORSE

"I have a cow that started shivering a few days ago. I blanketed her and then she became all right again. Since then the milk in two of her quarters became clotted. They got better but one of the others has gone in the same way. She calved in the spring.

"Also I have a big raw-boned blood horse that is rather unthrifty. His coat is staring although I keep him blanketed. Please advise me what to do in these cases.—C. W. D.

This is mammitis (inflammation of the udder). Purge with 2 lbs. Epsom salts and 1 oz. ginger, and follow up with 4 drams nitrate of potassium twice daily for two days. Bathe the affected quarters well four times daily with hot water, and after bathing rub well with hot camphorated oil. Milk the affected quarters four times daily until the milk becomes normal.

Get his teeth dressed. Give him a purgative of 8 drams aloes and 2 drams ginger and follow up with a tablespoonful three times daily of equal parts powdered sulphate of iron, genitian, ginger and nux vomica. Feed good hay and rolled oats with a little linseed meal, and a feed of bran twice weekly, also a couple of carrots or a mangel daily, and give regular exercise.

WHOLE OR GROUND OATS FOR HORSES

A horse with a good mouth, or set of teeth, does not require to have oats ground for it, and grinding in such cases is only an unnecessary expense, except during periods of hard work when the time alloted for eating may not be sufficient to allow the horse to properly chew and masticate the whole grain. If the horse's mouth is not in good condition for properly chewing and masticating the grain, as in the case of the very old horses, or in the case of young ones whose milk teeth occasionally give trouble by remaining in the mouth too long when the permanent teeth are coming through, it is the proper thing to feed the grain in the ground or crushed form. Horses' teeth however, should be frequently examined and any irregularities that appear be given prompt attention.

The contention that feeding all ground grain to young horses results in injury to their teeth bears some weight; in that, if allowed to do the grinding themselves, their teeth are less liable to wear irregularly as they grow out so as to leave sharp points and ragged edges that cause pain and prevent proper chewing and mastication of the food. And we say that feeding liberally and after careful, orderly method, with plenty of variety is more important than making feeds fine and soft, so that the animals can gorge themselves with little chewing. The organs of mastication and digestion should be kept working at their normal capacity. Pampeing should be avoided.

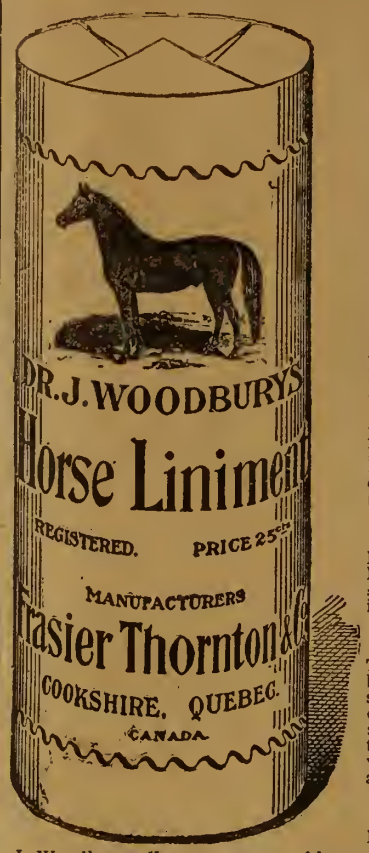
Some horses are naturally given to bolting their food. Though their teeth are in good condition, they eat greedily and swallow their rations without first properly chewing and masticating it. In their case it may be proper enough to feed grain in the ground form, but better results will be likely to come from mixing their feed in the whole form with chaffed straw or hay, or cut-feed as this is comonly termed. Feeding experiments have shown thatwhen horses are fed whole oats in this way the manurial voidings unmasticated is smaller than when the whole oats are fed alone.

DIARRHOEA

"I have a few steers that I am fattening. I feed them chop composed of one pound of buckwheat, 1½ lbs, of barley and 3 pounds of oats. I feed them 1¼ gallons twice a day with oat-straw and one pail of turnips, but it seems to give them the scours. Please let me know the cause and also the manner of treating same.—J. R.

The trouble is probably caused by the buckwheat. There is some local cause. Omit the buckwheat from the chop, and add to the drinking water ¼ of its bulk of lime water. Also give hay instead of straw. If this does not effect a change in conditions, omit the turnips for a time. If diarrhoea should become acute in any case, give 1½ ounces of laudanum and 4 drams each of powdered catechu prepared chalk in a quart of water as a drench every six hours until diarrhoea ceases.

Dr. J. Woodbury's Horse Liniment
THE INFALLIBLE REMEDY



For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Linlment to the hoofs of the forefeet to prevent their becoming feverish, dry, brittle, hard, contracted or otherwise injured Insist on having Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for which it is recommended when used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading horsemen of the Dominion and secured their highest confidence.

Bear River, N. S.
Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say that no lumberman should be without it.
Yours truly, Clarke Bros.

Hubbard's Cove, N. S.
Dear Sirs:—I have used Dr J. Woodbury's Horse Liniment in my stable for years and consider it the best liniment on the market for both internal and external use.
Yours truly, C. C. McLean.

Truro, N. S.
This is to certify that I have used Dr. J. Woodbury's Horse Liniment with the very best results for colds, coughs, distemper and all lung deseases. It is the best to give horses in the spring to keep them in condition. It purifies the blood, cleanses the lungs from impurities which may exist and gives the system healthy action.
Newton Lee, Owner "All Right" 5817.

Elmsdale, N. S.
Dear Sirs:—Kindly send me 6 dozen bottles Dr. J. Woodbury s Horse Liniment. I have not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.

Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as the best for all diseases of the horse. Yours truly, H. R. Whitehead.

Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the horse, I recommend it to my friends. E. J. Anderson, Truro. N. S.

FRASIER THORNTON, & CO., Limited, Manufacturers: Cookshire, Quebec, Canada

LICE

"I have a team of horses that have pig lice on them. I had the horses and pigs housed together for a short time, but now the horses are away from the pigs, but the lice have not left them and I cannot get anything to kill them. Please tell me what to do for them.—R. J. C.

The most effective application for this form of lice is a plentiful application of oil or grease. One part carbolic acid to 30 parts fish oil gives good results. Of course this is rather productive of dirt, as dust, etc., tends to stick to the animals. A thorough washing with a warm 5 per cent. solution of one of the coal tar antiseptics will give good results. Whatever is used should be repeated every 10 to 14 days until fresh vermin cease to batch out. The horses would be much more easily treated if they were clipped, but it is unsafe to clip them at this season unless conditions are such that very great care can be taken of them in order to prevent chills .etc.

GREASY LEGS

"We have a colt going on five years old that has greasy legs. It is his hind legs, and we would be much obliged to you if you would tell us a cure for it.—H. G.

Purge him with 6 or 8 drams aloes and 2 dram ginger. Follow up with 1 to 1½ oz. Fowlers solution of arsenic. (If the colt be not full grown give less doses according to size) twice daily for a week. Apply to the eruptions three times daily a lotion made of 1 oz. each of acetate of lead and sulphate of zinc to a pint of water. If this dries it up too much use 1 part carbolic acid to 30 parts sweet oil. If little raw elevations known as grapes be present, they should be cut off or burned off with a red hot iron, or if small, removed by the application, once daily of a little butter of antimony.

BREEDING A THREE-YEAR-OLD

"I have a three-year-old Clydesdale mare . Would it be wise to breed her in the spring or would it be better to let her go for another year? I have exhibited her at fourteen fairs and received first every time.—A. J. K."

It will be wise to breed her in the spring. She will be four yeasr old at the time of parturition.

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Removes Bursal Enlargements, Thickened, Swollen Tissues, Curbs, Filled Tendons, Soreness from any Bruise or Strain: Stops Spavin Lameness. Allays pain. Does not Blister, remove the hair or lay up the horse. $2.00 a bottle, delivered. Book 1 K free.

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Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

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THE LAWRENCE-WILLIAMS COMPANY, Toronto, Ont.

POULTRY.

THE LAYING HEN AND CHARACTERISTICS THAT BETRAY HER

A great deal has been said about choosing the laying hen. One writer on the subject says: "Notice the short feathers that grow on the head at the side of the comb. If these feathers curl up and are inclined to point forward, the hen is a good layer. If they lie smooth and close to the head, the hen is a poor layer."

Another writer says: "The layer carries a high tail, and stands high in front with her back not on a level and the rear parts not higher than the front." Such observations can count for but little in the selection of layers, since there are no facts to back up the assertions. The onl positive method of selecting laying hens is by means of the trap nest. This method, however, is practically out of reach of the average farmer, but experiment stations have aided in this regard by "trapnesting" a large number of hens and observing the characteristics of the hens that lay. In this way one is able to secure good results without being put to all the work of trap-nesting the flock.

The following methods are based on results of observations made on trap-nested hens by Prof. J. G. Halpin, of Wisconsin.

The hens that are off the roost first in the morning and last to go to roost at night, are generally good layers. The reason for this is simple. If they require just food enough to supply the wear of the body, it will not take long to secure it; but if they are good egg manufacturing machines, a large supply of food is necessary.

This method was tried by a farmer with a large flock. He had 250 hens and wanted to reduce the number to 150, as that was the capacity of his poultry house. Of course, he did not want to sell his best laying hens to the butcher. How could he pick out the hens that would lay during the winter? He was told of this method and so he closed the door of the hen house after the first 150 hens had left in the morning. It was successful, for he got practically the same number of eggs with 100 hens less. Another plan quite similar to this is to visit the coop at night and feel of the hen's crop, the one with full crop is the active laying hen.

The appetite of the hen is an indication of her productive capacity. Those with good appetites will meet the feeder at the door, and, if at all tame, may hop on to the feed basket. They will scratch the litter about the pen in a vigorous way in search of hidden grain and will be heard to sing contentedly as they work.

Good layers usuelly have bright eyes, full-sized red combs that are pliable and inclined to be slippery. The comb generally shrinks, becomes hard, light colored, and rough when laying ceases. The skin on a laying hen is usually smooth, oily and pliable. A wide, pelvic arch is also an indication of laying. Laying hens usually have loose bowels, but this is largely due to the ration. A hen inclined to be constipated is not getting a good laying ration. It has been noticed that hens with crow heads, that is, long peaked heads, are seldom good layers. The same is true of hens that are unusually long legged.

Late moulting hens are the best layers. Repeated tests show that heavy producing hens moult late and rapidly. This if applied in October and November, is the most important test of all. Late moulting hens have been discarded by many farmers who think that the early moulters are the winter layers. Early moulting hens are usually the winter drones.

Prof. Warren, of Cornell, uses the color of the shank in selecting the winter layers on his large poultry farm. This method can be used only when pellow skinned varieties are kept. A heavy laying hen needs so much yellow coloring matter to color the yolk of the eggs that the skin and shanks are drawn upon to make up the deficiency, causing the feet to become pale or almost white in color.

The degree to which the color fades, varies with the breeding, vitality, feed and range. Orange colored shanks fade slowly, while light yellow shanks fade rapidly. Hens confined in small yards and not supplied with green feed, usually have feet which fade rapidly. Weak or sick birds frequently lose the color of their shanks. Therefore, it is necessary to use this method with caution.

Some strains of Leghorns and other white ear lobed breeds have creamy or yellowish ear lobes before laying begins. Tests at the Connecticut Experiment Station show that the ear lobes become white after a few eggs have been produced. At the Wisconsin Experiment Station it has been noticed that the color of the face and often of the ear lobes of the red lobed breeds fades during heavy laying.

POULTRY NOTES

While it is best at all times to have good, sharp grit constantly before the fowls, it is especially important that grit be supplied when feeding whole oats so that the hulls of oats, which are very tough and unyieding, will be properly ground. With plenty of sharp grit there si no danger attending oat feeding, although the safest rule is to first soak the oats for an hour in water so that they become more softened.

Green bones are bones fresh from the butcher with the adhering gristle, meat, etc.

The sooner farmers recognize the fact that poultry culture should be followed on the same line that dairying is—giving food and care to secure result—the sooner will they begin to reap their share of profits and become competitors with practical poultry raisers.

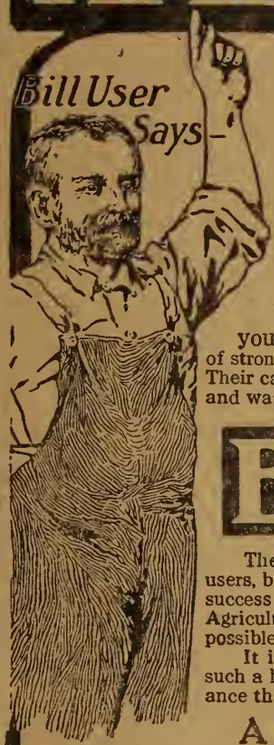
Green bone contains the natural juices as well as the adhering substances, making it superior to the bones that have lain on the ground for a while and lost all the natural juices or animal matter. Green bones are also more soluble and capable of having the mineral matter digested.

In parts of England, turkeys are fattened chiefly on Indian corn, scalded Indian meal and boiled potatoes, with home grown corn for a change.

It is claimed that the most delicious juicy broiler that an epicure can fancy is a turkey poult of about six pounds weight, or when about two-thirds grown, and of medium size. Many a young male, two-thirds grown, woulud be too large to broil; if rather large, however, the breast may be gashed, and thus more easily cooked through, but it must not be dried.

The following facts on marketing turkey feathers are well worth remembering: The quills from the third joint or tip end of the wing are called pointers, and should be kept separate. In packing, keep tail and wing feathers separate. Tie each kind in bundles by itself, and press the bundles in the boxes separately. All of the feathers must be clean, sound and dry-picked. The wing quills should have full plumage on both sides of the quill, which come from the first and second joints of the wing next the body, are more valuable than, and should be kept separate from, the pointers The tail feathers should be kept by themselves, and are the most valuable. The short tail and wing quills, if saved, should be kept separate from the long ones, as they depreciate their value if mixed with them. The directions for shipping are to mark the correct weight and tare on the boxes, also the name of the shippers, and ship as "turkey quills."

HATCH EVERY EGG



"Why gamble with valuable eggs and more valuable time experimenting with an incubator—learning to run it? It's business with you from the start with a **Buckeye** Incubator, because all the experimenting has been done for you.

"You don't **guess** on the hatch, you **get** it—to the full number of hatchable eggs the first time and every time. And good strong chicks too, that grow to quick maturity."

Whether you are a beginner or a big operator, your problem is the same— to get the full hatch of strong chicks. A hatch of weak chicks is worse than none. Their care is a waste of feed and time. You avoid the risk and waste with a

BUCKEYE
THE PERFECT INCUBATOR

The universal satisfaction of over half a million Buckeye users, big and little, proves that there is absolute certainty of success in hatching. Endorsement of the Buckeye by all the Agricultural Colleges and Experiment Stations removes all possible doubt.

It is built **up** to a standard, not **down** to a price. Up to such a high standard of correct principles and exact performance that we place behind it an unqualified guaranty.

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The Buckeye is guaranteed to hatch more chicks and stronger chicks than any other incubator; to operate satisfactorily in any temperature down to freezing; to require no artificial moisture and no attention to the regulator from the time the hatch is started until it is finished. Any Buckeye that fails to meet this guaranty will be taken back any time within 40 days.

We want you to put your Buckeye to a test with any machine. We want you to know for yourself that it is the best in the world. Our guaranty is behind the first hatch and every hatch.

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Seven Sizes-65 to 600 Eggs

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

HOW TO ENTERTAIN A GUEST

Hints are sometimes given to those who wish to be agreeable guests. It seems hardly fair that these should have all the advice, since there are some people whom you enjoy receiving in your own house, who do not know exactly how to manage matters when they have company at their own houses.

Now we will have a little talk on the other side of this question of entertainments and will speak of these frequent occasions when, as Dr. Holmes says:

"The visitor becomes the visitee."

There are some people who seem to consider that the obligation is all over when the guest has arrived; but in reality, it has just begun. You are responsible in some degree for the happiness of your visitors from the time they enterd your house until they leave it.

Young girls who have no household cares should feel this obligation especially, but some who do feel it do not know how to make their visitors happy and at ease, and so are so uncomfortable all the time they stay, an because they feel that they do not succed, become discouraged, and at last stop trying. Indeed, there is nothing more discouraging than to feel that you ought to do a thing, and not know exactly how or where to begin; but a few words of help, carefully remembered, may give one a wonderful start in the right direction, so here they are, for those of you who are looking forward to receiving visits from your young friends, with a sort of dread lest they may not have what they call "a good time."

It is not in the finest houses, or in the gayest places, that guests always enjoy themselves most. You must have comething better than elegant rooms, or all the sights and sounds of a big city, to make your home attractive and pleasant. It is a very low grade of hospitality which trusts in good dinners and fine houses alone. It must be a more subtle charm than either of these which will make your house a home to your friends.

All who have ever made visits themselves know this to be true. A cordial welcome, a readiness to oblige, a kind thoughtfulness of the pleasure of others instead of your own, are three golden rules for a hostess to remember. Let us loov at some of the smaller details.

In the first place, have the guest's room in readiness beforehand, so as not to be constantly supplying deficiencies after she comes. Put a few interesting books on the table, and writing materials, if it be only a common pencil, pen, and ink-bottle, wit a few sheets of paper.

Try to make the room show your guest that she was expected, and that her coming was looked forward to with pleasure.

A few flowers on the bureau, an easy chair by the pleasantest window —these are some of the little touches which make the plainest room seem homelike.

If your visitors are strangers, or unaccusteomed to traveling, try to meet them at the station, or to send someone for them. The sight of a familiar face among the crowd takes away that first homesick feeling which comes to young people as, tired and travel-worn, they step from the boat or cars into the sights and sounds of a strange place. When your friend is once established in the guest-chamber, remember that it becomes her castle, and is as much her own as if she was at home; so do not be running in and out two familiarly without an invitation. Let her feel that when you go there the order of things is reversed, and that then you are the guest and she is the hostess.

Let the pleasures which you choose for her entertainment be of a kind which you are sure she will enjoy. It is no kindness to insist on taking a nervous, timid girl on a fast drive, or out rowing if she is afraid of the water, under the impression that visitors must be taken somewhere, when all the time she is wishing she was on solid ground.

Do not invite people unaccustomed to walking to go on long tramps in the woods, and imagine that because it is easy and pleasant for you it must be so for them, nor take those who are longing for music to see pictures instead, while you are boring the picture-lovers, who may care nothing for music, with concerts. A little ingenuity and observation will give you enough knowledge of your friend's real taste to prevent you from making those mistakes; and, indeed, there will be little danger of your doing this if you keep in mind that the kindest thing you can do is to let guests enjoy themselves in their own way, instead of insisting that they shall enjoy themselves in yours. If they are fond of books, let them read in peace. I once heard a lady, who thinks herself hospitable, say to a young friend who was looking over a book which lay on the table, "If you want to read that book I will lend it to you to take home, but while you are here I want you to visit with me."

Let your friends alone now and then and do not make them feel that you are constantly watching over them. Some people, in trying to be polite, keep their guests in continual unrest. The moment one is comfortably seated, they insist that she shall get up and take a chair which they consider more easy. If she sits in the center of the room, they are sure she cannot see and if she happens to be by a window, they are afraid the light will hurt her eyes.

There is so place where there is more uncomfortableness than at the table. An entire visit is sometimes spoiled for a sensitive guest by having her friends say, from a mistaken kindness, "I am sorry that you do not like what we have. Cannot we get you something that you will like better " in this way calling the attention of the whole family to her, and making her feel that they consider her difficult to please. You can get something different for her the next time, if you choose; but do not let her feel that you are too carefully watching her plate.

Do not make visitors feel obliged to account to you for all their comings and goings, or tire them by constant and obvious efforts to entertain them. Unless they are very stupid people, they will prefer to entertain themselves for a part of the time, even though you make them feel that your time is at their disposal whenever they want it. I heard two friends talking, not long ago, of a place where they were both in the habit of visiting.

"How pleasant it is at Mrs. Chauncey's!" said one. "If you want her to go anywhere with you, she always makes you feel that it is just the place where she wishes to go herself."

"Yes," replied the other, "she never makes a fuss over you, but acts as if you did not cause an extra step to be taken, so that you don't worry all the time for fear you are making trouble; and if you want her advice about anything you are doing, she is always ready to stop her own work and show you just what you want to know, and makes you feel as if she was doing it for her own pleasure instead of yours —so much nicer than the way some people have of acting as though you were a constant interruption."

If any excursion is planned, and for any reason you find that your friend will be really happier to stay at home, do not insist upon her going, or allow the party to be broken up on her account. If she would really enjoy more to have you go without her, do not insist upon remaining with her. A friend of mine suffered much by being obliged to go on a steamboat excursion with a cinder in her eye, because she found that her friends would not do as she wished, and leave her quietly at home, and so, finding that the pleasure of a whole party would be broken up, she endured the pain of going with them, when she might have passed the afternoon in comparative comfort at home.

In the same way, some people will insist upon going about on business with a guest, who would much prefer to go alone.

In regard to conversation, remember sweet George Herbert's rule:

"Entice all neatly to what they know best,
For so thou dost thyself and them a pleasure."

Talk of the people and things which are most likely to interest those whom you wish to please. You would think it very rude to speak in a language which your visitor did not understand, and it is about the same thing to talk of matters in which they have no interest, an which they know nothing about. Every family has its sayings and jokes, which sound very funny to them, but unless they are explained they mean nothing to a stranger.

Do not ask many questions about your guests personal affairs, since you are taking them at a great disadvantage when they are in your own house, as they will not like to refuse to answer. Be careful not to be too ready with advice about a visitor's dress. If she asks you what is most suitable to wear on any occasion, tell her frankly; but above all things do not say or lo anything which shall indicate that you do think her clothes are not as pretty and fashionable as they ought to be. Sometimes a remark made with the kindest intentions will hurt a sensitive girl's feelings. Those of you who have read "The Diary of Mrs. Killy Trevelyan" will remember how the little country cousin felt when she saw Evelyn smile at the dresses which had been made with so much care. I once heard a lady speaking of her girlhood, when she made her first visit away from the farm where she had always lived. She said, as she looked back upon it, she always wondered at the kindness of the friends who received her cordially, and took her about with them cheerfully, when her dress was such as to make her laugh heartily at the mere recollection of it.

Before your guest comes, tell your young friends of her expected visit, and ask them to come and see her, and if you invite company to meet her, do it as soon as convenient after she comes that she may not feel that she is among strangers during the most of her visit. Western people coming East often think they do not receive a very cordial reception, because they meet so few people. A lady remarked to me quite recently that she did not know whether the friends she had been visiting were ashamed of her appearance or of the appearance of their own neighbors. She concluded it must have been one or the other, as no pains had been taken to have them meet each other.

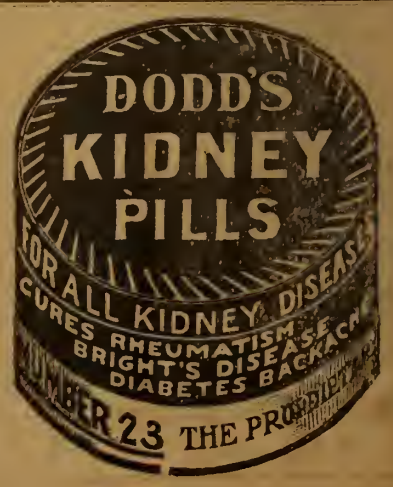
Do not ask visitors what you shall do to entertain them. That is your business, and you should not be so indolent as to shift it from your own shoulders to theirs. There may be many things which they would enjoy that they will hardly venture to suggest. Try and have a pleasant plan for every day. It will require thought and care on your part, but it is worth while. I do not mean, that you must be constantly taking them to some great entertainment. This is only possible to a few of you. In the most quiet country village some little visit or excursion may be easily found, if it is nothing more than a game of croquet with some pleasant girls, or an interesting story read aloud. Do not make the mistake of thinking that because things are old and dull to you, they are so to every one else. To the city girl, who goes weary and worn-out from the dust and heat of brick walls and pavements, the pleasant stroll in the woods, which is too familiar to please you, may be a fresh delight. So, to the one who has passed all her life among green fields, the sights and sounds of a city may be a great pleasure, even though it may

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:

A MESSAGE TO WOMEN!!

Mrs. M. Summers, Box 309 Windsor, Ont.



Had Heart Trouble

For 5 Years.

WOULD GO INTO FITS.

Through one cause or another a large majority of the people are troubled, more or less with some form of heart trouble.

Little attention is paid to the slight weakness until the heart starts to beat irregularly, and they suddenly feel faint and dizzy, and feel as if they were smothering.

On the first sign of any weakness of the heart Milburn's Heart and Nerve Pills should be taken, and thus secure prompt and permanent relief.

Mrs. W. H. Ferrier, Kilbride, Ont., writes:—"I was troubled with my heart for five years, and was so bad it would send me into fits and smothering. I could not do any work while I was affected, but after taking three boxes of Milburn's Heart and Nerve Pills, I have regained my health."

Milburn's Heart and Nerve Pills are 50c. per box at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

not seem possible to those who are tired of them.

It is surprising how many things there are to see, in any locality, if any will only take the trouble to find them; and the hope of making a visit pleasant to a friend is a good incentive to help one in the search.

If you cannot give your young visitor any elaborate and expensive pleasures, do not be discouraged. The sight of a brilliant sunset from some neighboring hill; a walk down broadway; the inside of a great factory, where the throbbing looms are full of interest to stranger eyes—if you have no more wonderful sights than these to show, these are enough.

Do not think it necessary to insist upon riding with your friends, if there is not room enough for you without crowding the others. I knew a lady who turned to her sister, who was visiting her, when but one seat in the carriage was left, and said: "Shall you stay at home, or I?" The guest replied that she was willing to give up, if necessary; whereupon the hostess handed her the baby and drove off, although she knew that her sister had particular reasons for wishing to go with the rest. This is almost too bad to tell of, even though it is true; but it exactly illustrates how selfishness in trifles may grow upon one unconsciously, until it becomes a controlling power. This fault has been rightly called "the tap-root of all other sins," and is the greatest difficulty we have to overcome in acquiring habits of uniform courtesy and consideration for others.

Do not urge your guests to extend their visits after they have clearly explained to you that the time has come for them to go, and that it is inconvenient for them to stay longer. Let the subject drop, merely letting them know that you are sorry to part with them. Do not convey the impression that you think you can judge better than they can of their own affairs, by constantly teasing them to stay, and saying that you are sure they could do so if they pleased:

"For still we hold old Homer's rule the best,
Welcome the coming, speed the parting guest."

THE loaf that never varies. The same yesterday, today and tomorrow—the "REGAL" loaf.
THE ST. LAWRENCE FLOUR MILLS CO. LIMITED
REGAL FLOUR
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REGAL
IS GOOD FLOUR

DIRECTIONS FOR KNITTING SOCKS

Some little time ago, at the request of one of our readers, we published particulars regarding the knitting of mitts. We are in receipt of a letter from a reader stating that she was successful in knitting a very nice pair of mitts from the directions given, and asking for instructions regarding the knitting of socks. At this time when so much knitting is being done for our soldier boys overseas, we have pleasure in publishing directions for the making of socks for the benefit of those who may be desirous of knitting for the folks at home or helping in this great war work in their spare moments during the winter months, but who may not be sufficiently expert in the art of knitting to do so without having directions before them.

Materials required—6 ounces 3-ply woolen yarn; 4 No. 11 knitting needles.

Cast on 60 stitches, 20 stitches on each of three needles.

Work in rib of knit 2 and purl 2 for 32 rounds. Work 11 inches in plain knitting with no shaping.

For the heel, put 30 stitches on the first needle, then eually divide the remaining stitches (required for the instep), on the second and third needles —both of which should be left until the heel is finished.

On the 30 stitches knit, alternately plain and purl, 30 rows, always slipping the first stitch. To turn the heel knit 18, slip 1, knit 1, pass the slipped stitch over the knitted, turn, purl 8, purl 2 together, turn, knit 8, slip 1, knit 1, pass the slipped stitch over the knitted, turn, purl 8, purl 2 together, turn, knit 8, slip 1, knit 1, pass the slipped stitch over. Continue working in this manner until all the stitches are worked in, leaving the 9 stitches on the needle under the heel, knit the 2 centre stitches together.

For the instep, follow on with the first needle and knit up 15 stitches on the side of the heel; knit on to the second needle the 30 stitches which were left for the instep when commencing the heel; then, with the third needle, knit up 15 stitches on the other side of the heel while adding 4 from the first needle.

Knit 2 rounds plain, then begin the decreasings, knit the 3rd and 4th stitches together from the end of the first needle and, on the third needle, knit 2, slip 1, knit 1, pass the slipped stitch over the knitted. Do this in every third round until there are 15 stitches on each of the first and third needles. Knit without shaping until the work measures 7 inches from the heel.

For the toe, * knit to the last 3 stitches on the first needle, knit 2 together, knit 1; on the instep needle, knit 1, slip 1, knit 1, pass the slipped stitch over the knitted, knit to the last 3 stitches, knit 2 together, knit 1; on the third needle, knit 1, slip 1, knit 1, pass the slipped stitch over the knitted one, knit to the end of the needle.

Knit 1 round plain. Repeat from * until the toe is reduced to 24 stitches.

Divide the instep and foot stitches equally on two needles. Turn the sock inside out and cast off the two needles together.

Another way of finishing the toe which is greatly in favor at the present time, on account of the fact that it makes a seamless toe, is as follows:

When the 24 stitches are left on the two needles, break off the yarn, leaving about 12 inches on the work, thread this in a darning needle and prepare the stitches by drawing the yarn through the first stitch of front needle as if for purling, then through the first stitch of back needle as if for knitting, then through the first stitch of front needle as if for knitting and take this stitch off, * draw through next stitch of front needle as if for purling to prepare stitch, then through first stitch of back needle as if for purling and take this stitch off, prepare next stitch of back needle as if for knitting, draw through next stitch of front needle as if for knitting and take this stitch off, repeat from * until all are taken off.

THERE'S AN OPPORTUNITY FOR EVERYONE, NO MATTER WHAT HIS WALK IN LIFE—ARE YOU "DOING YOUR BIT?"

Every person in Canada can help solve the national food problem.

The responsibility does not rest entirely on the farmer. Bankers, business men, lawyers, doctors, bookkeepers, clerks, mechanics, and even boys and girls can all help.

Bankers can help by making it possible for the farmers to get money easily for extended farming operations.

The business executive who has had experience in organizing large working forces of men can render excellent service in helping mobilize the food-production resources of the state.

The merchant can help by extending generous credit where it is needed and where the reason is actually that of using funds for increased food production.

Seed dealers, implement dealers and harness dealers will find an opportunity for service in making it easy and convenient for the farmers to get the things they have to sell under terms which will make it possible for them to proceed with the work at once.

And all of us, big or little, can help in the actual production by planting and tending a garden. If we can't, for any reason, o this, let us finance some fellow who can.

Let's "do our bit."

But production is not the only thing to be done this summer in order to solve the food question. Food must be saved. No smallest portion should be wasted. And here, again, all of us can help.

In the first line trench in the food conservation campaign are the housewives of the state. In the kitchen, where the food first enters the house, is the place where the greatest economies can be practiced.

No scrap of meat should be thrown away. Convert them into soups, hash, or croquets, and utilize every bit of

VOLPEEK
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I was cured of terrible lumbago by
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Are Very Popular in Prince Edward Island

MR. M. ARSENEAULT TELLS WHAT DODD'S KIDNEY PILLS DID FOR HIM

They Gave Him Quick Relief From Headache and Backache—He Recommends Them to All Sufferers.

Cape Egmont, P.E.I., Jan. 21st—(Special.)—Dodd's Kidney Pills have numerous friends in this tight little Island, and among the most enthusiastic of them is Mr. Mathurin Arseneault, of this place.

"I recommend Dodd's Kidney Pills to all who suffer." Mr. Arseneault says. "I had been troubled with headache and backache about two years till I read in Dodd's Almanac how many sufferers had benefited by using Dodd's Kidney Pills.

"I decided to send for two boxes. Before I had finshed taking them I was feeling as well as ever.

"It gives me great pleasure to say a few words for Dodd's Kidney Pills."

All over the island you find people who tell of benefits received from Dodd's Kidney Pills. They are recognized as the standard remedy for kidney pills. Acting directly on the kidneys, they refresh and invigorate those organs. The result is that they do their full work of straining all the impurities, all the seeds of disease, out of the blood. That is why Dodd's Kidney Pills are recognized as a tonic.

the fat and grease so that every ounce of nourishment is extracted.

Boil potatoes in their jackets. Experiments conducted at the North Dakota Agricultural college recently revealed the fact that one-fifth of a given quantity of potatoes is wasted when they are peeled raw. Besides, a large part of the nourishing properties of the potato lies directly beneath the skin.

Save small pieces of bread, unfit to serve on the table, and convert them into puddings or dressings for meats.

Prepare now for the summer vegetables. See that your kitchen equipment is in shape and definitely plan to can every vegetable raised in your garden this summer over and above what are needed for immediate consumption.

If there is fruit on your place, can every bit of it you do not eat.

Plan to store such vegetables as will keep without canning, so they may be saved for winter use.

Keep some chickens and feed them such scraps as simply cannot be converted into human food. If they produce more eggs than you can consume, save them by putting them into a water-glass solution.

Are you "doing your bit?"

HELPFUL HINTS THAT MAKE THE DOLLARS GO FARTHER

The syrup from sweet pickles may be used in place of boiled cider in making mince pies.

When you see a hole in your linoleum fill it with a mixture of ground cork and glue, to keep the hole from enlarging.

In opening your jelly glasses save the paraffin for next year's jelly-making, for the paraffin can be melted and used with equal success again.

You can still use broken talking-machine records. Cut the minto uniform parts, tie these in a small piece of muslin and you have excellent ironing wax.

To keep cheese from getting dry and hard, wrap it in a cheese cloth wrung from vinegar, and keep it in an earthen or glass jar with the cover slightly raised.

When a tablecloth is so worn out that recutting into napkins is a waste of time, make roller towels of it for the kitchen. Even though worn, they will last surprisingly long.

Gingham curtains. A well-known interior decorator has introduced a novel effect in window hangings by the use of checked ginghams, from 15 cents a yard upward, in place of cretonne.

To save quilt cotton use worn-out stocking tops. Cut off the feet and open the tops. If outing flannel is used for quilting the stockings need not be sewed together. Children's or ribbed stockings are especially good for this purpose.

Do not throw away your powder-box because you think it is empty. If it is a pasteboard box, cut a slit in the side; if a can, pry open the top. You will be surprised at the amount of powder you will find in the bottom and on the sides of the box.

To cook prunes without sugar, mash one pound of prunes, cover them well with water, let them stand overnight, bring to a boil, set on the back of the stove and let them simmer all day. Add a pinch of salt. The longer the prunes are cooked the sweeter they will taste.

Beans and drippings, combined, make a good shortening for pie crust. Cook the beans until well done, season with salt, and mash until they are as fine and smooth as lard. One cupful of mashed beans mixed with two tablespoonfuls of clear meat drippings may take the place of one cupful of shortening.

One clever woman restored the worn place in her bedroom rug by painting it with ordinary water colors the same shade as the carpet, using enough water to make the coloring liquid quite thin. She then reversed the carpet so that the painted spot was under the bed and the unworn part in front of the bureau.

Baby's folding bath screen. A very useful screen for baby's bath can be made from a wooden drying frame (twenty-five cents in most kitchen furnishing stores), covered with nursery cretonne on the outer side and lined with rubber sheeting or oilcloth

Startling Facts Brought Out By Strict Medical Examination

THIS great war, with all its suffering and terrors, is teaching us many lessons. As the result of strict medical examinations many are learning of defects and of derangements which they had not even suspected.

Recently a record was kept of several thousand men who were examined. The average age was 30, and 97 per cent. were found to be defective in one way or another. Most of those included in this class were unaware of any impairment of health.

35 per cent. were found to have derangements of the kidneys and 23 per cent. hardening of the arteries.

Many of these men would live for years, but life could be greatly prolonged by immediate steps to improve health, and in many cases the derangements would entirely disappear.

35 Per Cent. of Several Thousands Examined Had Kidney Trouble

The Evidence

Mr. J. F. Robson, R.R. No. 4, Komoka, Ont., writes: "I am certainly glad to recommend Dr. Chase's Kidney-Liver Pills to anyone suffering from kidney trouble. I suffered for a long time from kidney disease and pains in the back. I commenced using Dr. Chase's Kidney-Liver Pills, and found that by using two pills a week the kidneys and bowels were kept in perfect order, and that I had no more pains in the back. We always keep these pills in the house for general use."

Mr. A. D. MacKinnon, Kirkwood, Inverness Co., N.S., writes: "I can highly recommend Dr. Chase's Kidney-Liver Pills to all suffering from weak kidneys. I suffered from kidney disease for a long time. I may also say that for three years I was nearly always troubled with headaches, and no treatment seemed to do more than afford temporary relief. I was finally told of Dr. Chase's Kidney-Liver Pills, and after using a few boxes was completely cured. I have also used Dr. Chase's Ointment, with the best results, and never fail to recommend these wonderful remedies."

You may know something of the reputation of Dr. Chase's Kidney-Liver Pills as a means of overcoming derangements of the kidneys. Reports of cures are appearing in the leading newspapers throughout Canada. There can be no doubt of the efficiency of this great medicine. But how are you to be aroused to your condition?

Backache is one of the early symptoms, headache, loss of flesh, dryness of the skin are others. Deposits in the water after standing for twenty-four hours are a positive warning.

Dr. Chase's Kidney-Liver Pills are effective when other treatments fail, because they awaken the action of the liver and bowels as well as the kidneys. They reach the source of trouble when most complicated. You can depend on them for splendid results.

Dr. Chase's Kidney-Liver Pills

One pill a dose, 25c a box, 5 for $1.00, at all dealers, or Edmanson, Bates & Co., Limited, Toronto. Do not be talked into accepting a substitute. Imitations only disappoint.

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Prof. JESSE BEERY, 701 Main St., Pleasant Hill, Ohio

with cretonne pockets. Paint the frame with white enamel.

A pastry bag for icing cakes can be made at home. Fold a twelve-inch square of rubber cloth from two opposite corners. Sew the edges together to form a triangular bag. Cut off the point to make an opening large enough to insert a tin pastry tube. A stiff manila paper rolled into cone shape. with a fancy opening cut at the tip, will answer the purpose. nad with a little practice excellent designs can be made.

If light furs have become soiled you can easily clean them at home by the follwing method: Mix together two cupfuls of flour, two cupfuls of bran and a quarter of a cupful of Fuller's earth. Brush and shade the furs well, lay them on a table and rub in the mixture with a coarse piece of flannel, rubbing the fur the wrong way. Shake out all the cleaning powder and go over the furs a second time, using only bran; shake the bran out and wipe the fur with a clean cheesecloth.

THE HABIT OF TALKING AILMENTS

Talking about one's ailments is a habit, and a habit which. if once formed, is hard to get rid of. When we meet a friend and they say "How do you do?" they do not expect or wish us to go into a detailed account of our physical ailments, but how many people take advantage of our national salutation to unload sickness and suffering on their friends and acquaintances. "This world is so full of a number of things" that there are many delightful subjects for conversation. And how we all love the cheery, wholesome person, who. after a few moments of conversatin. leaves us with a pleasant sensation of uplift and inspiration that is a real physical and mental tonic.

A person in perfect physical condition is unusual. Nearly every man and woman has some sort of physical ailment that if enlarged upon will assume momentous proportions. All have pains and aches which if ignored will disappear. "A merry heart doeth good like a medicine," and the merry heart does not entertain thoughts of ill-health, to unload on all who have the patience to listen.

We should all be sympathetic for real sickness and suffering. but it is well to ignore the complaining hypochondriac.

The old way of carrying fowls by their legs, or by their wings, is not practised by the present-day poultrymen. It is a cruel practise. Holding the fowl firmly by the legs and allowing the body to rest on the arm is a much better method.

THE DEHORNING OF CATTLE

The dehorning of cattle can be satisfactorily performed without other apparatus or instruments than a good strong clothesline and a clean sharp meat saw, or a miter saw with a rigid back. The same simple means for controlling the animal is just as applicable when dehorning clippers are to be used as when the horns are to be removed with the saw. The head of the animal is secured to the horizontal rail or stringer which holds the upper ends of the stanchion boards. The animal is put in the stanchion in the usual manner; then one end of a heavy clothesline is passed around the upper part of the neck and tied in a knot that will not slip, otherwise it will choke the animal. The free end of the rope is now carried between the horns, through the stanchion to the front, up and over the horizontal stanchion rail, then down underneath the neck and up over the top of the stanchion rail to an assistant, who should hold it firmly. Now open the stanchion, allowing the animal to withdraw its head; then, keeping the rope tight, pass it once around the muzzle, up and over the stanchion rail and through to the front again to the hands of the assistant, who should stand 3 or 4 feet in front of the animal and hold the rope firmly, but prepared to release it when told to do so by the operator. The animal is now ready for the dehorning operation.

It is necessary that the rope be held by an assistant, as in the event of the animal struggling during the operation so as to throw itself off its feet, or if there appears to be danger of its choking, the rope may be slackened promptly at the word of the operator and the animal partly released. This, however, is rarely necessary, for as soon as the head is secured the operator should be ready, standing at the right shoulder of the animal with his saw, and proceed to saw off first the right and then the left horn. It is a good plan before commencing the real work to experiment upon an animal on the matter of control by tying the head to the stanchion rail as described.

If the stanchion rail is too wide to permit of properly securing the lower part as well as the upper part of the animal's head, the turn of the rope around the muzzle may be omitted and the last lap of the rope carried around the stanchion rail to the front and to the hands of the assistant. Care should be taken that the rope pass each time over the neck of the animal to the stanchion rail between thehorns in such a way that it will not interfere with the work of the saw.

The horns should be severed from a quarter to half inch below where the skin joins the base of the horn, cutting from the back toward the front.

If the cut is made too high an irregular, gnarly growth of horn is very apt to follow. It will be seen that the point of union of the skin and horn varies in different cattle; hence there can be no rule of measurement, except as the eye becomes trained to see the point or line at which the cut should be made. In the beef breeds fully one-half inch of skin, all around, is usually taken off with the horn.

Instruments for Dehorning

In recent years, since dehorning shears or clippers have come into use, this means of dehorning is considered by some cattle owners to be preferable, especially where large numbers of cattle are to be dehorned. One type of dehorning has a stationary knife blade, with its cutting edge shaped like a very wide V, and opposing this another knife of similar shape, moving in a slide, so that the cutting edges cut the horn from all four sides at once, all the edges passing the center at the same time. Another type has a movable knife with one oblque or one curved edge, and the cutting is done in one direction only. The power for cutting with these instruments is supplied by pulling together handles, which, in order to transmit a greater force, are generally so constructed that they act through the medium of a series of cogs.

In dehorning with these instruments the opening between the cutting edges should be slipped down over the horn and the knives closed so that their edges set firmly against the horn in such a position that the cut will be made in the right place and in the right direction. The blades should be kept covered with a thick oil or grease. The handles shouuld be drawn together with a quick, firm, strong pull, so that the horn will be completely severed by the first act and without twisting. Care should be taken to keep the blades sharpened on their original bevel.

Treatment After Dehorning

It is not usual to apply any preparation after the operation of dehorning to prevent bleeding, as the loss of blood is not sufficient, as a rule, to be of consequence. Care should be taken, however, to prevent substances frm getting into the openings left after the horns are removed. The horn cores are elongations of the frontal bones of the skull, and are hollow. They communicate with the frontal sinuses, or air spaces, of the head; therefore foreign substances or fragments of horn which act as an irritant in these cacities are apt to set up inflammatioin, resulting in the formation of pus or an abcess, which may prove qute serious. This trouble is of infrequent occurence, but would appear more liable to happen when the dehorning instruments are used, on acount of their tendency to crush, especially in the case of old animals, whereas the saw cuts clean. If proper care is taken, however, such an occurence following dehorning may in almost every instance be avoided.

Occasionally animals after being dehorned and turned out of the stable will rub their heads against a dirt or gravel bank or the rough bark of a tree, and foreign material may thus get into the cavities, though usually the soreness of the parts is sufficient to prevent this.

PEERLESS GATES
Down the road or far across the fields is often an "entrance," a mere hole in the fence, a constant source of danger to stock getting through. The best way to
Keep Your Stock Where You Want Them
is to provide real gates, strong and durable. All Peerless Farm Gates are of heavy open hearth steel wire on strong tubular steel frames electrically welded in one solid piece, and braced like a steel bridge. No sag, no rust, no wearing out. Ask your dealer to show you Peerless Gates, also Peerless Perfection Farm and Poultry fencing with the famous Peerless lock at all intersectious.
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PEERLESS THE ALL AROUND FENCE
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THE CANADA STARCH CO. LIMITED, - MONTREAL.

The dehorning aperation should always, when possible, be performed in cool weather, and upon animals which have at least attained the age of two years.

To Prevent Horns Growing on Young Calves

When circumstances are favorable, as in the case of farmers who build up their herds by raising the progeny, the horns may be prevented from growing by a simple and practically painless method, and the custom of preventing the growth of the horns is becoming more popular and more generally practised under all conditions except in the case of calves dropped on the open range. The calf should be treated not later than one week afetr its birth, preferably when it is from three to five days old. The agent to be used may be either caustic soda or caustic potash, both of which may be procured in the drug store in the form of sticks about the thickness of an ordinary lead pencil and five inches long. These caustics must be handled with care as they dissolve the cuticle and make the hands or fingers sore. The preparation of the calf consists in first clipping the hair from the parts, washing clean with soap and warm water, and thoroughly drying with a cloth or towel. The stick of caustic should be wrapped in a piece of paper to protect the handsand fingers, leaving one end of the stick uncovered.

Moisten the uncovered end slightly and rub it on the horn buttons or little joints which may be felt on the calf's head, first on one and then the other, alternating, two or three times on each, allowing the caustic to dry after each application. Be very careful to apply the caustic to the horn button only. If it is brought in contact with the surronding skin it will cause pain. Be very careful also not to have too much moisture on the stick or caustic, as it will remove the skin if allowed to run down over the face. After treatment, keep the calf protected from rain, as water on the head after the application of caustic will cause it to run down over the face. This must be carefully avoided.

Either caustic soda or caustic potash alone, without the admixture of other substances, answers the purpose satisfactorily. Some years ago, however, certain preparations of "dehorning compounds," composed largely of one or the other of these caustics, were generally used, and as inquiries are still occasionally received concerning such preparations, the following formula is given: Combine in an emulsion 50 per cent. of caustic soda, 25 per cent. of kerosene, and 25 per cent. of water. The caustic soda is dissolved in the water and heated to the boiling point, then removed from the fire, and the kerosene gradually added, while the mixture is vigorously stirred. This emulsion is applied in very much the same manner as the thick caustic, except that it is necessary to employ a short stiff brush. Sometimes a meat skewer is used, the large end being mashed to form a stubby brush. Two or three appuications should be made to each horn button, as in the case of the stick caustic, with intervals to allow it to dry.

In the very young calf the horn button, or point that will ultimately develop into a horn, has scarcely any attachment to the skull, and may be felt as a small button embedded in the skin. In this early stage it may be easily removed with a sharp knife or a pair of curved scissors, but even then the caustics should be used to kill any remaining cell life belonging to this germ point; otherwise there may be come subsequent irregular horn growth, which is more or less of a disfigurement.

DAIRYING AND THE DEVELOPMENT OF DAIRY CALVES

(Continued from page 226)

in a position to have everything on the place thriving. By having the cows calve at different seasons, a regular supply is available and can be fed to calves up to a yera. and even if the amount is only a few pounds, it makes for continuous growth and thriftiness.

I believe the success of the live stock business depends on the amount of milk we can produce the year around. In order to be successful stock raisers, we must have some system of raising calves that will guarantee making a success of each years lat—that will develop every calf properly. Despite all the examples and articles written on this subject, the majority of farmers in this province cannot or do not grow their calves properly or economically. My opinion is that there are more buyers of good bulls today than raisers of good calves. Very many farmers do not get the most out of feeding their skim milk, and although I am going over old ground. my advice is not intended for those who have mastered the problem, but to the many who have some calves every year "that do not seem to do well."

The trouble generally is in not letting the calf get quite fat enough before changing from whole to skim milk. No time allowance should be follwed. If you have decided to raise the calf, let it get a good lot of baby fat. Most thrifty calves will be in shape at from two to four weeks to take a little skim milk. While a calf can often be given almost all the new milk it can drink without injury, none of them can stand to much skim milk. My practice is to always weigh each calve's milk up to 3 months old. No one should consider this to much trouble, as a spring balance scale hung near the separator is all that is necessary, and the little time taken is time very well spent. I never think of feeding youngsters without weighing their milk, as it is the only sure way of avoiding scours. If a calf is taking nine of ten pounds whole milk twice a day at three weeks, as a large calf generally will. I drop back one pound as a safety first precaution.

When part skim milk is first introduced, and another pound when on a full skim milk ration, better have them go just a little hungry than risk indigestion and scours. I supply a meal mixture where they have access to it from birth, also hay and roots when they are a month or so old. At the present time my six three-months old calves running together in a box stall. get twenty pounds skim milk each per day, sixty pounds turnips and ten pounds meal mixture, about equal parts crushed oats, bran and oil cake meal. and all the hay they can eat. I never had calves growing faster nor in better condition. The chief trouble to guard against in calf raising is over-feeding of milk up to three months, and in not increasing their grain, root and roughage ration fast enough as they grow. Calves of a large breed, grow so fast and develop appetites accordingly. that like feedenced p3crg f.uhE m..a a..l fli.—xing a big growing boy, only experienced persons can get it into their head how very much they require. Don't imagine this is costly feeding. It is probably the cheapest growth that we can make, as a well fed animal makes nearly half its mature weight up to one year. Having a small body to support. nearly all the feed goes to growth. After three or four months, when a calf is eating plenty of other feed, it is not so easily put off its feed and we seldom need to increase its milk ration above twenty pounds a da yif we have plenty of other feed, although if skim milk is plentiful and the desire is to grow a big calf for the age. increasing the skim milk will grow it faster up to surprisingly large quantities, if we do not increase to fast. For economical reasons, as the calf grows larger and requires more liqiud, we generally add water to its milk. seldom going over 24 pounds skim milk a day at any age. The longer we can keep the milk ration up, the faster will the animal develop.

Every person in charge of feeding calves must learn to be observant and watch closely for any indication of scours, and if noticed in time, a limiting of the milk will be all that is necessary. Increase the meal. roots and roughage as they see mto require it, giving all the hay they will clean up twice a day. If it is the intention to breed the heifer to calve before thirty months, she must be fed generously winter and summer. A heifer well grained and fed may drop her first calf at twenty-four months without stunting her or causing any other injury. I believe such heifers make the most persistent milkers if handled in this way. The average farmer had better not let them have their calves until at least thirty months, if they have to rough it summer and winter, if we desire to keep up the standard size of the breed. whatever that may be.

Dairying is the soundest, safest and surest business any progressive farmer can take up, and in conjunction with well bred cattle. one of the most pleasant of occupations. Good cows are essential to success. They can be bred and raised by everybody, and the surplus will now command a price that will pay us well for the trouble of raising them. Aim to breed and raise large cattle of good type as well as good producers. No one likes a homely cow, and good producers need not be that sort. Don't try to raise too many calves, but try to develop every one properly. A cull is a continual loss and an eyesore. and this sort is usually developed in infancy, so keep a careful lookout for the calves.

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will put flesh on the poorest, most run-down animal on your farm. We stand back of this guarantee to the extent that we will refund your money if it does not give the desired results when directions are followed.

PUT ROYAL PURPLE STOCK SPECIFIC TO THESE TESTS: See if it will increase your milk flow. See if it will improve the condition of run down animals. See if it enables you to market pigs a month earlier. We know it does all these things. We ask you to try it—and benefit by its use. Sold by dealers everywhere in large and small packages.

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HOGS IN HOT WEATHER

During hot eather there is no other living creature on the farm that suffers as much from heat as the hog, and many valuable animals have been lost from this cause. A hog is much more likely to get too hot in summer than he s to get too cold in winter. In every summer pasture there ought to be plenty of shade and good water. Plenty of these in a pasture will save on the grain feeding bills later on.

Trees maks the best shade, and I am fortunate in having plenty of trees and an abundance of good running water in my pastures. But in many summer hog pastures there are no trees. and shade must be provided by artificial means. Most any kind of shelter can be made to serve as a shade. It is very seldom desirable to provide permanent buildings for shade during hot weather, as the various pasture lots cannot be so easily reached unless they are all connected with separate lanes to the permanent house. As colony houses can be moved from one lot to another as the hogs are changed on pasture, they can be used to advantage in protecting the animals from the hot sunshine In using colony houses it is necessary to provide them with extra doors so ample ventilation may be obtained.

A simple and inexpensive style of shelter can be provided by the temporary use of burlap. Old bags in which feed is purchased can be sewed together and nailed to strips of board fastened to posts or uprights. These can be taken from one lot to another and will furnish all the shade that is necessary. A framework of poles covered with straw will give satisfaction. Four rough forked posts with a few poles laid across from corner to corner and thence from pole to pole, forming a ruude set of rafters, will support the roof of straw.

Owing to the heat, a hog's system requires more water in summer than in winter It is surprising the amount that a drove of hogs will consume on a hot day. Water is essential in the proper digestion and assimilaton of the food. Since a large part of the animal body is made up of water, and a great deal is constantly given off in one form or anotherf, it is very important that te animals have all the good water they will drink. But a hog not only wants plenty of water to drink but a good supply in which to wallow during hot weather. In a pasture where there is no running stream or pond it will pay well to dig a large shallow hole and to keep it filled with water. The wallow should pe placed in the shade of trees if possible, or a temporary shed built over it.

A light, sloppy feed is safer for hogs in hot weather than a more solid ration. A big advantage of pasture is that it furnishes a laxative feed at the time of year when it is all important that the hog's bowels be in good condition. One of the effects of hot weather is to cause constipation in hogs. The excessive heat seems to throw the hog off feed more easily than it does other classes of animals. A laxative feed is the natural preventive. While my hogs are getting plenty of green food in pasture I feed them no grain except ground oats. The oats are mixed with sweet skim milk and fed morning and evening. Sour food is not wholesome, at least, old, sour skim milk is not. Buttermilk, if fed while fresh and cool, is a wholesome food.

The importance of keeping hogs free from worms should not be overlooked. Worms are a great curse to the swine-growing business. Usually where one hog of the drove is found to have worms it is a safe wager that they all have, for the eggs of the worms pasing out in the manure from the diseased hogs develop into larvae and are taken into the systems of other hogs as the yroot about in the yard or gather food in the pasture. The beginner with hogs frequently does not recognize the presence of worms, and wonders why his hogs seem so unhealthy when they have so much good feed. I have tried various worm remedies, but the best I have ever used is lye. This is an extremely concentrated product, and should be used with care. I thoroughly mix it with swill, so that each animal gets only his proportionate share. A heaping tablespoonful to a barrel of swill will clean out the worms and does not injure the hogs. It can be fed once every day for a week or so, and then not given for a month or more when it may again be fed for a few days. My experience has proven to me that this feeding at intervals will rfee the hogs of worms and keep them free. Another good remedy for worms os copperas. A little of this mixed in the swill and fed for a few mornings in succession usually gives satisfactory results.

A.O. CHOATE.

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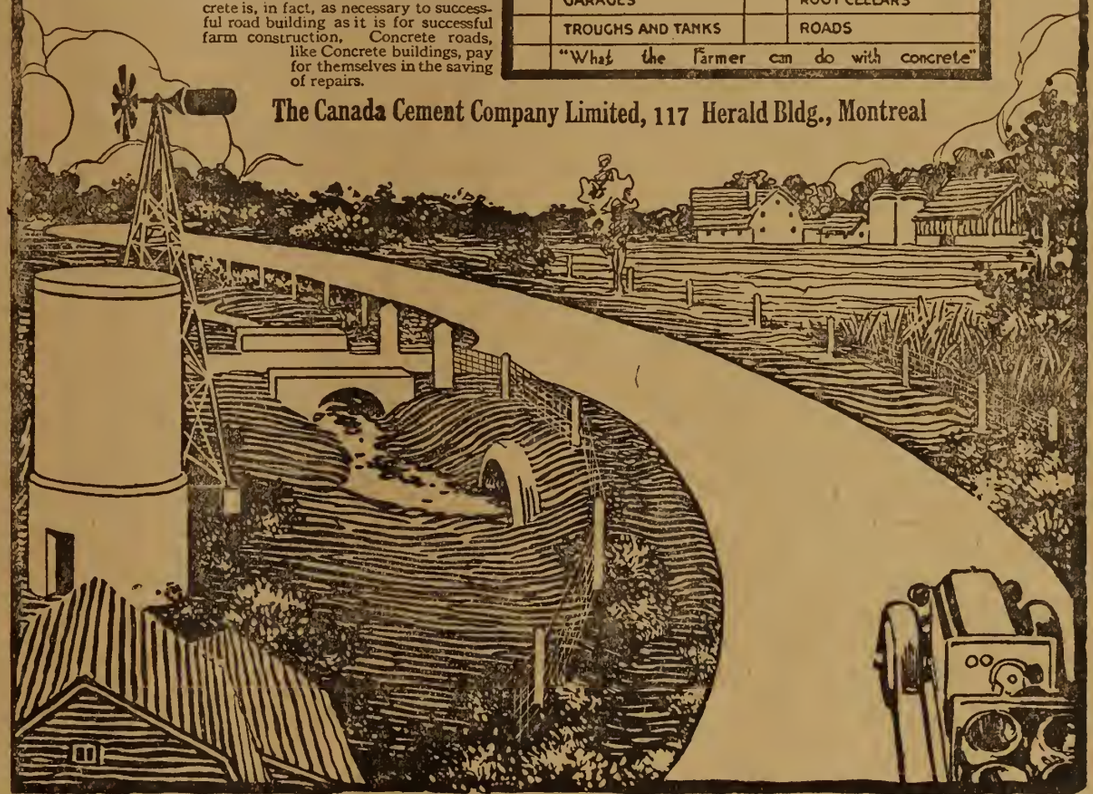

HAY FOR WINTERING EWES

Sheep can be successfully wintered with a smaller use of grain than is needed for other live stock. If in good condition at the beginning of winter and given the right kind of hay they can be caried through the winter without grain unless the lambs are to be dropped before going to pasture. Alldepends upon the kind of hay or roughage used, advises the United State Department of Agriculture.

Legume hays stand at the forefront as roughage for sheep. No other roughages approach them in feeding values. The coarse-stemmed hays, like timothy, red top and blue grass, have very few leaves, an, therefore, are poor sheep feeds Hays having a large amount of timber in them also are undiserable. Not only is timothy unpalatable to the sheep but it causes serious cases of constipation. The dry timothy heads work into the wool, causing irritation to the skin, lessening the value of the clip, and making shearing difficult. When timothy or other coarse-stemmed hay is fed to sheep in winter quarters, it becomes necesary to use supplementary feed to keep the sheep in condition.

If any nonlegume hay is fed, supplementary protein feed is needed. Linseed meal is good, since in adition to furnishing protein, it counteracts the constipation effect of timothy hay. From one-quarter to one-half pound of linseed meal per ewe daily should be used, depending upon the size and condition of the animal and the other feed used.

In an experiment conducted at the Missouri station and reported in Bulletin No. 120, the relative values of clover and timothy hays for wintering ewes were determined.

Fifteen ewes fed 2.9 lbs. timothy hay and 0.35 lb. grain uer head daily lost 7.6 lbs. each during the same time that anotser lot receiving the same weight of grain and clover hay gained 6.5 lbs. The 14 ewes fed clover hay dropped 16 strong lambs, while those fed timothy dropped 11 strong and five wee klambs. The lambs from the ewes fed clover hay gained more rapidly during the first 30 days than did those form the ewes fed timothy hay.

"Would you kindly tell me what to do to rid horses of pinworms? I have tried a good many treatments but none seems to have any effect.—J.L.C.

These worms inhabit the rectum. Inject into the rectum a gallon or two of warm, soapy water. When this, with the faeces that were present have been expelled, inject 1 oz. of oil of turpentine mixed with a quart of new linseed oil.

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The construction of this lamp is perfect. The light does not waver, it is steady as the sun and the nearest approach to daylight that science has discovered. Fine to work or read by, colors can be so distinguished by this light that it is possible to do even the finest needle work under its rays. TAKE CARE OF YOUR EYES, MONEY CANNOT REPLACE THEM. BY INSTALLING OUR LAMPS, THE EYE STRAIN WILL BE RELIEVED AND YOU WILL FIND LIFE A PLEASURE. Remember we sell the lamps on approval and you are the judge and jury Certainly we could not do that if they were not what we claim, so don't hesitate. Send for particulars—NOW —TODAY.

STYLES FOR HOMES, STORES, FARMS, SCHOOLS, CHURCHES, HALLS, STREETS, RINKS, ETC. ALL STYLES OF MANTLES, SUPPLIES, ETC., AT LOWEST PRICES.

MacLAREN LIGHT CO.,

MERRICKVILLE, ONT.

WHEN HENS EAT EGGS GET AFTER FAT BIRDS

...ou-
...ng.
...t most
...indications of a possible broken and eaten egg in your flock, get busy, try to trap the hen that lays the soft shell egg, not the one that eats it.

All up-to-date breeders have a separate pen for fat hens. There are always a few hens in a flock as a rule that will take to fat, even of the same variety, same age and on the same feed. These fat hens must be culled themselves. They are the ones that start your trouble. If unable to catch them onthe nest, go over them at night, while on their perch. Take one at a time and go over them carefully. You can't help but find the fat ones.

The first thing to do after separating the overly fat ones from the remainder of the flock, is to place them in a stall that is sufficiently large to afford plenty of exercise and light.

The floor should be covered with clean, dry litter to the depth of ten to twelve inches. Theis grain should be fed in this litter. It should consist of half wheat, the other half oats and buckwheat equal parts, fed in the litter in the morning; regulate quantity acording to the number of hens you have, or about two ounces per head per day.

Noon meal should consist of green food, sprouted oats, or vegetables shredded. Have bran before them at all times, also grit, shell and charcoal. Twice a week for two weeks add one tablespoonful of Epsom salts to each quart of water you place before them. Dissolve the salts the night before in a cup of water. Throw a few oyster shells on the floor every day in addition to what you feed in the fodder. Cut the corn out during this treatment. Try to reduce the fat. As soon as the weather permits put them back in their regular pens and let them get outside. Make them work all you possibly can for what feed they get, and I will assure you that the hens will lay good, hard shelled eggs, and plenty of them. The egg eaters have now disappeared.

Some of our big breeders cull out all birds inclined to flesh up easy and prepare them for market. As a rule they will never lay very many eggs at their best.

In cases where hens have been neglected and egg eating has been going on for some time, and where the whole flock has formed the habit, there is but one course to take. Darken your nests and keep the hens busy digging for something to eat. Feed little and often in litter, and as soon as weather will permit, let them go outside. Soon they will forget.

The experienced poultryman is seldom bothered in this direction, as he is on the lookout constantly.

A stitch in time is worth nine, and eggs are to expensive for hens to eat.

Veterinary Editor, — "Would you tell me something that will cure ringworm on calves? I had some calves that had it last year, and they have it yet. I have used castor oil and machine oil, and I also got something from a veterinary surgeon but it did not help it any. Please advise me what to do.—A. E. Stratford."

Isolate the affected and be careful to not carry the infection (which is a vegetable parasite) to healthy animals on hands, clothing, etc., Moisten the scales with sweet oil, remove them and then apply tincture of iodine twice daily until cured. An ointment made of four drams white helebore mxed with 2 ounces vaselin may be used instead of the iodine.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B

Ayrshire Cattle

C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

Shorthorn Cattle.

Walter E. Eaton, Upper Cunard, Kings Co., N.S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

FOR SALE

A pen of 8 S.C. White Leghorn Layers 6 pullets and 2 yearlings, of a trap-nested bred-to-lay strain. Price $15.00. Barred Rock, White Wyandotte, and S.C.R.I. Red Cockerels; fine large birds of good type and color, from strains that are bred for quality and egg production, $3.00 each. Only a few left. Write for further particulars, or order direct from this advertisement.
H. M. Mc MONAGLE, Fredericton, N. B.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.

FOR SALE !

We have for sale in Shorthorns of milking blood, Roan Bull, 18 months old, large and well built, also several Bull Calves. Heavy and Light Horses.

L. M. ANDERSON,
SACKVILLE, - - - N. B

COMMISSION MEN PAY MORE

Dealers pay more for cattle that have been dehorned. The hides are worth more and the flesh has less bruises. Write for booklet telling about the KEYSTONE DEHORNER. R. H. McKenna, 219 Robert Street, Toronto.

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PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

McINTYRE BROS.
SUSSEX, - - N. B.

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Near neighbors, good school, only 4 miles to R. R. village, creamery, saw mill, grist mill, stores, churches, high school, theatres, etc.; rich loamy soil, 20-cow pastures, estimated 700 cords wood; apples; sugar maple grove of 400 trees; comfortable 6-room house, cow barn, sheep barn, horse barn, granary and sugar house; invalid owner makes low price $2600 and if taken soon includes 5 cows, calf, bull, 2 pigs, 2 horses, poultry, wagons, cart, buggy, sleigh, sleds, 3 set harness, plow, harrow, cultivator, mower, horse rake, etc., etc.; with $900 down and easy terms; for details see page 10, Strout's Catalogue of 321 bargains, copy mailed free. E. A. STROUT FARM AGENCY, DEPT 2612, 294 Washington St., Boston, Mass.

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This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The adcress must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issue. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex, N. B.

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Entire show herd for sale. See our record at the recent Halifax show. All prize-winners from three year old cows down bred by myself, and sired by Champion and Sire of Champion Stately Monarch. Write for particulars.

A. N. GRIFFIN,
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FOR SALE—Four Bulls fit for service also some Yearling Heifers and a few Bull Calves.

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Newburn Hill Stock Farm

Our present offering is one pure bred Shorthorn Bull, 11 months of age, also a few Heifer from one to three years of age. All of good milking qualities.
Beef, Hay and Potatoes in car lots.
Choice Cultivated Strawberries a specialty
FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
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Barred Rocks !

At the Big Show at Halifax in December 1917, my birds ran away with practically every 1st in the open class. At this show my wins were remarkable, although exhibiting few birds—1st cock, 1st cockerel, 1st and 3rd hen, 3rd pullet, 2nd pen.

At the Provincial Exhibition in Halifax 1917, my birds made practically a clean-up. Whenever shown this stock wins consistently.

In Red Sussex my stock also wins year after year consistently.

A few females for sale. Eggs for sale in season.

PERCY CAREY,
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Firshade Farm R.O.P. Shorthorns

Present offering, 2 Bull Calves, One Heifer, three years old.

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FOR SALE

A handsome, well-grown Guernsey bull. Sire purchased from the Experimental Farm, Ottawa; dam of equally good breeding, and a heavy producer. Will be sold reasonable. Full particulars on inquiry.

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Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 23. SUSSEX, NEW BRUNSWICK, FEBRUARY 5, 1918. Number 9.

APPLE SPRAYING

By G. E. Sanders, Field Officer in Charge
Dominion Entomological Laboratory
Annapolis Royal, N. S.

Mr. President and Gentlemen: It gives me more pleasure than ever before to have the privilege of addressing this, your annual meeting of 1918; first because we obtained during the season of 9117 more interesting and more instructive results from our experiments than we have ever before been able to obtain in a single season and which we will endeavor to put before you today, and second because you have been able to dispose of your fruit at prices which a year ago when I was traveling about the Valley holding meetings in the interests of "more sprayin" would have sounded to you like the figures of a Victory loan or a National debt, than apple prices.

The apple growers of the Annopolis Valley are to be congratulated not only on their success of the past year but in the confidence they have shown in their one big industry and their determination not to neglect what Prin. Cumming terms their big permanent asset, their apple orchards, even if the outlook for prices is dark and many men who should know better advise not spraying. The growers of the Annapolis Valley know that neglecting the orchard in most years means the loss of the next years crop and they intend to finish the war with their orchards in good condition and ready to supply the markets that nature and geography intend them to supply. I say this not because I hear it spoken, I do not hear it spoken, but I see it acted and actions speak louder than words. For the past three years there ahs been an uninterrupted increase in the amount of spraying material used and that is all that is required to gauge the faith of growers in their industry. For three years pessimists have told us during the winter and spring that "Apples would not be worth picking next afll." As fall and winter have approached each year their theories have been disproved. In 1915 we got good prices and in 1916 and 1917 record prices for our fruit.

I cannot leave this subject without refering to President F. A. Chipman's address and its two portions of true prophecy in this meeting one year ago. He said, "Just now let me say that black spot or apple scab never was so prevalent in Ontario as in 1916. Many of the Ontario orchards were almost defoliated in August and September, owing to scab infecting the leaves, I leave it to you gentlemen to guess the effect of that on the Ontario crop of 1917 and to judge the extent to which Ontario apples will compete with our apples in 1917-18." Again he said, "As fruit growers studying the economical growing and marketing of our fruit we are in very much the same position as last year and we may, I think, with profit ask ourselves the same question as the successful optimist of last season asked himself, 'Can we afford to neglect our orchards even if we get nothing for our crop this year.' " I think gentlemen, that we can very well consider these remarks of the ex-President, made one year ago, when deciding on our orchard procedure of 1918. They show us that neglect is apt to react and spoil the crop of the following year, for we are supplying Ontario apple towns with their apples this year, and that we cannot be sure of a failure even if all signs do point towards low prices.

Spraying Work for 1917

Last year I came before you in this meeting and told you that lime and sulphur used as a fourth or last summer spray was causing the loss of a great deal of fruit in Nova Scotia and recommended that you change for that one spray to Bordeaux. I advocated the reduction in strength of the lime and sulphur for the after the blossom spray and the substituting of arsenate of lime for arsenate of lead, because it is not only a little safer on the foilage but it is much cheaper. We advised testing soluble sulphur and arsenate of lime for the first spray and the use of 15 lbs. of paste lead arsenate to 100 gallons of water, straight asma preblossom spray for orchards that were badly infested with canker worm, relying on the excesive amount of lead arsenate as being an efficient fungicide. We knew that in many respects the old standard recommendations for lime and sulphur did not apply to Nova Scotia conditions, but where and to what extent we could dilute lime and sulphur and still have it an efficient fungicide we did not know. We recommended these changes in the interests of safety and although we can see where we can improve on our recommendations for 1917 we are satisfied that the weakening of the lime sulphur, the substituting of arsenate of lime for arsenate of lead and the using of Bordeaux for the last summer spray has saved thousands of barrels of apples that would have been caused to drop had the old strength of lime and sulphur and arsenate of lead been used. In this regard we cannot say absolutely that no harm has resulted where the solution recommended were used. This was partly due to ours being the only Government staff in America in 1916-17 recognizing injury and loss of fruit from the use of lime sulphur. We did not know just how far to go in recommending the weakening of the lime sulphur solution nor did we anticipate the spray gun and the worst season of spray injury since lime and sulphur were first used.

During 1913 and 1914 we used lime and sulphur from 1-35 to 1-40 with excellent results, only an occcasional man complaining of burning or spraying his apples off the trees. In 1915 this complaint became very general and in that year it was demonstrated in the orchard of Mr. G. L. Thomas as well as in two of our own experimental orchards that lime and sulphur used for the fourth spray would cause the apples to drop and that Bordeaux and soluble sulphur (a sodium sulphide) wouuld not cause the same drop even if more leaves were apparently burned by the soluble sulphur than by the lime and sulphur. n 1916 we found that lime and sulphur 1-43, and stronger, with arsenate of ilme 1-37½ with arsenate of lead would cause serious dropping of the fruit and that weaker solutions, down to 1-75 would cause some, but apaprently not serious, injury.

How Lime Sulphur Injures the Apple

Our first work in 1917 was to find out how lime sulphur caused injury and dropping of fruit, whether it was the spray burning the fruit, the stems of the sets or the leaves. About a week after the blossoms fell we took a hand atomizer and sprayed 1-30 lime and sulphur on all of the apples and stems of the apples on a Gravenstein limb. On another limb we sprayed the leaves only with the same solution taking care not to to touch the fruit. Where we sprayed the fruit no harm resulted but where we sprayed the leaves all of the fruit dropped. About this time Mr. S. B. Chute sent two men out to spray with the new spray guns. One man spraying from the ground up through the trees did serious damage to the foligge, while the other man caused no injury. We immediately tested this out in the laboratory and found that we could wet the upper side, only, of apple leaves with 1-30 lime sulphur solution and no injury would result but where we wet the under side of the leaf with the same solution we got very severe burning and usually dropping of the leaves. Spraying with soluble sulphur and Bordeaux on the under side of the leaf apparently caused no more harm than the same solution applied to the upper side. It was found that the burning following the application of lime sulphur to the under side of the leaf appeared on the upper side which was untouched by the spray instead of on the under side where the spray was applied. About this time we extracted some of the chlorophyll or green coloring matter from the leaves an tested it out by pouring lime sulphur into one bottle of chlorophyll solution, soluble sulphur into another and Bordeaux into another. The lime sulphur caused a sudden change in the green solution, throwing down a brown percipitate, the soluble sulphur and Bordeaux caused no marked change. The next move was to section some leaves, the under side of which had been sprayed with each of the three solutions. It was found on sectioning the leaves and putting them under a microscope that the lime sulphur was being absorbed by the leaves and causing a marked change and browning of the chlorophyll in the palisade tissues, the soluble sulphur and Bordeaux caused no apparent change in the chlorophyll contained in the cells of the leaves.

It must be understood that the chlorophyll of the leaves is the medium through which plant food is gathered from the air and manufactured into sugar, starch, cellulose, etc. Practically all of the combustible portion of the plant comes from the air and only the ash and water comes from the roots, so you see that the chlorophyll of the leaf is infinitely more important than the roots in gathering food for the plant. The chlorophyll is mostly stored in the upper or palisade c ells of the leaf and it is for this reason that the spray applied to the under side of the leaf appeared to injure the upper side first. The upper side of the leaf is covered by an impervious coat of waxy coated cells through which the lime sulphur could not pass. The under side of the leaves is covered by a coat of thin walled cells bearing small hairs and contains numerous openings or stomata in through which the carbon dioxide gas is taken to be manufactured by the chlorophyll into sugar, starch, etc., so we can see how much easier it is for a leaf to absorb from the under than from the upper side. This in turn shows us why spraying down with lime and sulphur does no damage, while spraying up with the same solution will either temporarily or permanently injure the chlorophyll and cause the fruit to drop.

Methods of the Application of the Spray Affecting Lime Sulphur Injury

There is no doubt that the increase in the size, pressure and nozzle capacity of the power spraying outfits have been in a great measure the cause of the increased amount of burning in recent years, the high pressure having a tendency to wet the under side of the leaf more thoroughly. The spray gun introduced in 1917 while it is in my mind the very finest thing yet invented for applying spray, has been the cause of an immense amount of injury during the past season as practically all of the operators used it from the ground, many standing near the butt of the tree and spraying up in all directions, wetting the under side of the leaves more thoroughly than the upper side. This procedure with lime and sulphur has invariably resulted in very severe burning, with soluble sulphur and Bordeaux no appreciable injury resulted. In using the spray gun, or any nozzle, for that matter with lime and sulphur spray so as to wet only the upper side of the

leaves on the second, third and fourth sprays or injury will result.

We found in 1917 that the directoin in which the spray was applied was more important than the strength of the solution. We found that lime sulphur 1.005 sp. gr., or 1-60 could remove practically all of the fruit when applied in all directions as a fourth spray. In one orchard where we sprayed with three different kinds of Bordeaux as fourth sprays the trees averaged over 150 apples each but hwere 1.005 sp. gr., limen and sulphur was used at the same period the trees gave only 6 apples.

On the other hand we have evidence in many orchards, particularly Mr. J. Howe Cox's orchard in Cambridge, that the old strengths of lime, hulphur, that is 1 to 35 and 1 to 43, can be used htroughout the season and applied with a spray gun and no damage of loss of crop result. Mr. Cox had his men hold the gun a long way off from the trees and sprayed so that the upper and not the lower side of the leaves received the spray.

Periods at Which Lime Sulphur is Dangerous

We have corroborated our previous finding that the greatest damage from lime and sulphur comes from the fourth spray but we have found that it will also reduce the crop materially as a second or third spray. The following table gives the results.

No. of apples per Wagner tree. Only one spray apples to each plot. Lime Sulphur plots 12 trees each, Soluble Sulphur and Bordeaux Plots 16 trees each.

	Lime sulp. 1917 spray calendar	Soluble sulphur 1-40	Bordeaux 4-4-40
Spray 1	152.66	121	87
Spray 2	40.33	61.25	62
Spray 3	28.66	43.75	55.75
Spray 4	8	74	77.5

These figures show that no period do soluble sulphur and Bordeaux do appreciable injury in removing the fruit while lime sulphur after the first spray begins to reduce the crop, doing its greatest harm as a fourth spray. It is important to note that lime sulphur used as a first spray did not cause any reduotion in the crop.

Effect of Light on Lime Sulphar

Our attention was called by Mr. B. G. Pratt of New York to the work of Dr. Stone of the Mass. Agricultural College in regard to the effect of sunlight in causing plants to resist spray injury. It was found that plants kept for a period in darkness would burn more readily than those in full sunlight. We tested this point out with apple seedlings and found that plants kept in a dark room for a week and then sprayed and placed in full sunlight would burn very badly with lime sulphur and only slightly with soluble sulphur. In the same way plants kept in a half lighted cellar would burn badly with lime and sulphur but not at all with solubls sulphur and Bordeaux. Plants kept in full strength sunlight did not burn with any one of the three sprays applied.

Chlorophyll is not manufactured in the absence of sunlight and after a period of drakness the chlorophyll is depleted so the injury resulting from spray acting upon a portion of it is more serious than after a epriod of bright sunshine. An instance of the effect of sunlight on the green color or chlorophyll is the potato sprout which in darkness is pale but on being brought to the light turns green or under the influence of sunlight manufactures chlorophyll.

During the summer Mr. F. H. Johnson of Brigdetown noticed that the north and inside of the tree showed the most spray injury and asked in regard to it but we could not then explain the cause. In going over the country we constantly heard that lime sulphur must be different from what it was when it was first brought out as it did not cause injury years ago. After following up several lines of enquiry including the analysis of lime sulphur over the whole period we decided to look up the sunshine records which are here given.

Number of hours of bright sunshine for the months of May, June and July for 5 years.

	1913	1914	1915	1916	1917
May	194	192.6	173.5	214.	122.4
June	271	256.6	199.6	180.1	187.2
July	256	249.2	220.4	217.8	199.6
Total	721	707.4	623.5	611.9	509.2

These figures show about 100 hours less sunshine in the three months of 1915 and 1916 than in the same period of 1913 and 1914. In 1917 we had 100 hours less sunshine during the three months than we had in 1916 and 1915 and 200 hours less than the corresponding periods in 1914 and 1913. We know that we first got serious injury from lime and sulphur in 1915 and that we had about the same amount of injury in 1916 and that in 1917 we have had more injury from lime and sulphur than we have had in any previous year. We know that lime sulphur injury is an injury to the chlorophyll and that the amount of chlorophyll in a leaf and its resistance to lime sulphur injury is a question of sunlight so we have the abnomal amount of injury from lime sulphur in 1917 explained. This also explains the excessive burning on the north side and in the middle of the trees. We may have in 1918 a bright sunny season with little or no lime sulphur injury.

Fungicidal Value of Some of the Sprays

Although we have often heard the statement that "lime sulphur and Bordeaux are of equal value in the control fo apple scab" we have made observations on the fungicidal value of hte various solutions incidental to our other work which goes to disprove the statement.

In our Wagner plots the following percentage of apple scab was found. Only one spray being applied to each plot.

	Lime sul. 1917 calendar	Soluble 1 bl. to 40	Bordeaux 4-4-40
1st spray	21.	17.2	9.4
2nd spray	32.5	23.	4.6
3rd spray	16.5	17.5	5.4
4th spray	43.3	9.8	24.5

The difference being all in favor of Bordeaux until scab infection, which took place just after the third spray. The fourth spray was of course valueless and no deductions can be drawn fro mit.

Percentage of Pit in the Same Plot

	Lime sulphur	Soluble sulphur	Bordeaux
spray 1	17.9	19.2	8.2
Spray 2	26.9	14.3	1.
Spray 3	4.2	28.7	2.4
Spray 4	16.6	1.5	.6

In the control of pit the difference is in favor of Bordeaux throughout.

In New Brunswick in co-operation with Mr. A. G. Turney, Provincial Horticulturist and Mr. G. C. Cunningham of the Dominion Division of Botany, we got data which proved Mr. Turney's statement that lime sulphur alone will not control apple scab on McIntosh in a bad year in Fredericton. But we found that where the lime sulphur inc ommon with all of the other sulphides failed that we could control applescab on McIntosh in the same orchard with Bordeaux. While there is but little difference between the value of the two in an when put to the most extreme tests the Bordeaux proves itself superior as a fungicide.

Percentage of Inkspot in Crimson Beauty

Sprayed July 14th. Picked Aug. 21st. Placed in storage for 39 days.

Lime sulphur 1.005 sp. gr. or 1 to 60 27 per cent. Inkspot.

Bordeaux 7-7-100 No Inkspot.

This shows one of hte reasons why apples sprayed with Bordeaux, provided they are not seriously russeted will keep so much better than those sprayed with lime and sulphur. Our observations and count of apples as well as the statements of warehouse managers go to show that Bordeaux has a marked effect o ncontrolling storage scald or bronzing while lime and sulphur is of little or no use in this regard.

In regard to russeting of the fruit from the ues of Bordeaux, we told you last year that Bordeaux used as a fourth spray would cause no appreciable russeting. In 1917 we got the following results on Wagner.

Percentage of Russeting 4-4-40 Bordeaux

First spray—12.6—very slight.
Second spray—61.5—mostl slight.
Third spray—69.7—moderate to bad
Fourth spray—1.4—very slight.

In one case a block of Banks Red Gravensteins was sprayed with 4-4-40 Bordeaux 12 days after the blossoms fell and practically no russetting resulted. The Thomson-Bushanan Bordeaux made 2 lbs. bluestone, 10 lbs. of lime to 40 gallons of watetr used throughout the season gave only slight russetting and if used for the two sprays before the blossoms and one two weeks after would give very slight russetting indeed. Any Bordeaux used immediately after the blossome will ,in addition to russetting, pale the fruit or prevent it from coloring, this results to a lesser extent from using Bordeaux immediately before blossom.

Bordeaux Bronzing

Leaf injury or bronzing from Bordeaux seems to be cumulative. One spraying of 4-4-40 Bordeaux will not cause bronzing but when used three or four times on the same tree it will cause serious bronzing, yellowing and defoliation. The Thomson-Buchanan Bordeaux mads up of two pounds of bluestone and ten pounds of hydrated lime to 40 gallons of water has not caused leaf injury even when used four times in one season. I look for a great increase in the amount of Thomson-Buchanan Bordeaux to be used for the first, second and fourth sprays the coming year. That the material will control fungus and give a crop has been amply demonstrated by Mr. John Buchanan of Berwick during the past two years.

A Method of Preparing Bordeaux Quickly

We have this year prevailed upon the United Fruit Companies to have a stock of bluestone pulverized to pass a screen of 20 meshes to the inch made for them. By the use of this material and hydrated lime it will be possible to make the mixing of Bordeaux with power outfits as easy as the drawing of lime sulphur from the cask.

In using this material weigh out the quantity of bluestone and put it into the empty tank. Start the engine and agitator and fill the tank. It will take from five to fifteen minutes to fill the tank but the bluestone will dissolve in less than one minute. When the tank is nearly full, add the hydrated lime, always using an excess of lime, when the tank is full the spray is ready to apply.

The powdered bluestone costs about 2 cents more per pound than the crystals and the difference in price may or may not be paid for, in time; that depends on the time the grower has to spare in the spraying season.

Sodium Sulphide

(Soluble sulphur, Sulfocide, Spra sulphur)

Last year we advised the testing of soluble sulphur with arsenate of lime for one spray only and many used it for their first spray with good success. We have found that soluble sulphur 1 lb., hydated lime 10 lbs., and arsenate of lime ½ lb. to 40 gals, the three being added in the order named, may be used four times on the most tender foilage without injury. For those who are inclined to experiment we would recommend this for the third spray only. It would seem desirable in experimenting to try on a small plot, say one tank for each spray.

First spray—3-10-40 Bordeaux.
Second spray—2-10-40 Bordeaux.
Third spray—Soluble sulphur 1 lb. or Sulfocide 1 qt., Lime 10 lbs., Arsenate of lime ½ lb. to 40 gallons.
Fourth spray—310-40 Bordeaux.

This programme may have defects and we would only recommend it in an experimental way where one is anxious to eliminate lime and sulphur from the programme.

Poisons

In 1917 as in previous years we have found that arsenate of lime is slightly safer than arsenate of lead with lime sulphur and it costs only about one half as much per content of arsenic. With soluble sulphur, arsenate of lime is the only poison that can be used. With Bordeaux arsenate of lime is satisfactory and cheap. Arsenate of lead is no better insect killer with Bordeaux but in 1917 the Bordeaux arsenate of lead combination gave slightly better scab control. Personally I would favor for this season some of the finest grades of arsenate of lime for use with Bordeaux on account of their low cost as compared with arsenate of lead.

Insect Outbreaks

The outbreak of canker worm is still going strong and in many of the infested orchards tree tanglefoot has not been applied. The only means now of preventing defoliation in such orchards is to spray very thoroughly just before the blossoms open with 15 lbs. of paste lead arsenate to 100 gals. of water. We advocatet paste over the powder for this purpose. On the whole we have found arsenate of lead, 15 lbs. to 100 gals., about as valuable in the control of apple scab as lime sulphur, in a rainy season it si somewhat more valuable, in an ordinary season of about the same value.

The Tussock moth did serious damage in 1917 by eating the fruit and in 1918 will undoubtedly be more abundant than in 1917. We found in 1917 that the third spray killed more tussock moths than the fourth, although the larvae emerge only a few days before the fourth spray is applied. The Tussock moth is very easily detected in the orchard at the present time, the egg masses being very conspicuous, 100 to 150 eggs in a mass either naged or covered with a white froth and attached to one or two dead leaves anywhere on the limbs or twigs of the apple or other deciduous trees. Where Tussocks are present we would advocate the addition of poison to the third or after the blossom spray and where there is a very serious outbreak we would advocate the use of 15 lbs. of paste lead arsenate to 100 gals. of water for the third or codlin moth spray.

Saving Effected by Co-operation

I need hardly remind you of the savnig that has been affected by the United Fruit Companies in the purchase of poisons this season. After having gone over the whole situation I find that arsenate of lime will sell in Nova Scotia from 11 to 14 cents less per pound than in Ontario and Quebec and paste arsenate of lead will sell from 4 to 7 cents less per pound in Nova Scotia than in the above mentioned Provinces. You are all benefiting to a greater or less extent by these prices which were brought about solely by the immense buying power and economical distributing machinery of the United Fruit Companies. By getting their poisons so cheaply as compared with other districts the Nova Scotian growers can afford to use relatively more of them with consequent benefit to their orchards.

(Continued on page 267)

The Nova Scotia Farmers Association

The twenty-second annual convention of the Nova Scotia Farmers' Association was held in the Court House, Truro, on January 22nd to 24th. The attendance was not so large as at some previous meetings but the whole province was well represented by about three score of her most intelligent farmers who had come together to listen to the valuable addresses prepared for them by our foremost agricultural propagandists with a view to glean the choicest morsels and rehearse them to their respective Agricultural Societies and kindred associations. These former delegates also had another object in view; viz., the discussion of problems confronting their respective communities and to formulate memorials to the government and other sources that can give redress.

President Murray occupied the chair and in his customary racy and entertaining fashion, kept the convention in good fettle for work.

His Worship Mayor Dunbar welcomed the delegates to Truro, after which the president read his address.

A communication from Dr. Jas. W. Robertson re Agricultural Rerief to the Allies was read and placed in the hands of a committee to suggest action. As a result a fund was opened for subscription and the sum of $56.00 was realized before the convention closed.

One of the main features of the evening's programme was an excellent address by Prof. J. M. Trueman on "Law and Superstition," in which he dealt with many of the essential features of successful stock raising.

The Wednesday morning program included the reports of Directors, Exhibition Commissioners and Supt. of Agricultral Societies, and an excellent talk on Stallion Enrollment and Inspection by Dr. J. A. Sinclair, V. S., in the course of which he pointed out some very potent results that surely follow in the train of breeding to only quality sires.

The Wednesday afternoon session was held at the Agricultural College. In the Science Building Prof. W. H. Brittain gave a practical talk on "Spraying,, dealing particularly with potato spraying from the standpoint of "what we are spraying for" and "what shall we spray with, "Time of Application, Rate of Application and combinations to use in combating fungus and insect pests of the potato."

The Bordeaux mixture 4-4-40 was the main spray advocated for blight with arsenate of lime added as the cheapest insecticide that can be procured this year.

Prof. Britain advised the farmers to urge upon their friends the necessity of procuring their supplies early in order to avoid the possibility of not being able to procure supplies later.

Following Prof. Britain's address the delegates visited the basement of the Main College Building where they inspected various makes of sprays and other lines of farm machinery.

During the latter part of the afternoon a live stock demonstration was given in the pavilion where Prof. Trueman and Dr. Sinclair conducted discussions on the merits of the splendid specimens of the bovine and equine species exhibited in the ring.

During the Wednesday evening session Prof. L. C. Harlow gave an excellent talk on "The Fertilizer Situation" and strongly urged the necessity of procuring supplies without delay.

Prof. W. Saxby Blair read an instructive paper on "The Place of Agricultural Associations in Greater Production." This paper will be published in full in the next issue of the Maritime Farmer and in accordance with a vote of the Association it will be published in phamphlet form for distribution to Agricultural Societies.

Col. Blair, one of the fathers of the Association was present, and invited to address the meeting. Despite his advanced years, Col. Blair's mind is still keen and clear. He lead his audience back through the life history of the Association and rehearsed many condtions that existed when he was a boy over seventy years ago to instance what may be accomplished in trying times. Col. Blair is strongly in favor of every movement that tends to be prepared for future possibilities in the food supply situation.

The reports of the Legislative Committee and the County Farmers' Association were also received at the evening session.

The Sheep Protection resolution which was passed at last year's convention and which had been turned down by the Legislature was ratified and ordered to be again presented at the next session of the Provincial Legislature.

The election of officers took place on Thursday morning and resulted as follows:

President—Samuel Freeman, Amherst.

Vice-President — D. R. Nicholson, Coxheath.

2nd Vice-President—Walter Churchill, Yarmouth.

Directors—E. J. Johnson, George's River; J. Howe Cox, Middleton; Johnson Cameron, Stellarton; A. N. Griffin, New Minas; Wallace Rhodenizer, Bridgewater.

Auditors—Professors Landry and Trueman, N. S. A. C., Truro.

Legislative Committee — Wm. O'Brien,Windsor and S. A. Logan, Amherst.

Exhibition Committee—F. W. Foster, Kingston and H. S. Kennedy, Stellarton, re-elected.

RESOLUTIONS

The following resolution were discussed and adopted:

Whereas the demand for wood for fuel and other domestic purposes is increasing and whereas the supply is diminishing at an alarming rate.

Therefore resolved that the Nova Scotia Farmers' Association in Annual Session at Truro, do hereby request the Hon. Commissioner of Crown Lands for the Province of Nova Scotia to have prepared and distributed a pamphlet on the conservation of wood lots containing information that would be most suitable for conditions in this province.

Moved by A. Hector Cutten; seconded by H. S. Kennedy.—Carried.

* * *

Whereas we as an Association recognize the necessity of grading potatoes for market, as is necessary for apples, and

Whereas, at present many potatoes are put on the market which should be fed on the farm, and

Whereas the United States have recently adopted a similar law and all our potatoes shipped to the West Indies will come in competition with graded potatoes,

Therefore resolved that we ask for legislation requiring potatoes to be graded similar to the United States law.

Moved by J. H. Cox;! seconded by Wallace Rhodenizer.—Carried.

* * *

Whereas owing to the great increase during the past few years in the number of Agricultural Societies the present grant of $15,000 to the Agricultural Societies of the whole province gives a very small grant to each individual society when distributed.

Therefore resolved that the N. S. F. A. in convention at Truro, composed largely of delegates from the Agricultural Societies of the province urges the Provincial Government to increase the present grant to $20,000.

Moved by J. H. McIntosh; seconded by Wallace Rhodenizer.—Carried.

* * *

n view of the agitation in favor of the Daylight Saving scheme for the coming summer by the cities and towns of Nova Scotia and whereas if this scheme is adopted and made compulsory on the farmers of Nova Scotia it will work a great injury and injustice on an already over-burdened class from scarcity and quality of farm labor available.

Therefore resolved that the Nova Scotia Farmers' Association in Annual Session assembled at Truro, place themselves on record as opposed to such a scheme as far as the farming class is concerned.

Moved by A. Hector Cutten; seconded by Stanley A. Logan.

* * *

Whereas the increase in freight rates to take effect soon will make it more difficult than ever for the farmer to produce inasmuch as the extra freight is paid on his products and comes out of his pocket,

Therefore resolved that we as members of the N. S. F. A. assembled at Truro, urge the Federal Government to nationalize the railroads of Canada with a view to reducing expenses and tariffs.

Moved by J. H. Cox; seconded by A. N. Griffin.—Carried.

* * *

Resolved that we the members of N. S. F. A. in sesion asembled realize that the time has arrived when Agricultural Societies who change from one breed to another without consulting the Department of Agriculture should suffer a penalty of losing their claim to their share of the grant for the aid of Agriculture.

Further resolved that the Government be asked to amend the Agricultural Act to embody this idea.

Moved by R. M. Jackson; seconded by Wm. O'Brien.—Carried.

Whereas the Food Controller has urged upon the farmers to produce all the food possible and whereas the farmers of Nova Scotia are desiious of doing the same, and

Whereas more feed will be required to finish the beef and pork at present on hand,

Therefore be it resolved that the Nova Scotia Farmers' Association here assembled do memoralize the Honourable Food Controller that he do not permit either mills, manufacturers or dealers to hold such mill feed in stock that may be required for feeding purposes, in order to enable our farmers to finish their beef and pork and not compel them to put their products on the market in an unfinished order.

Moved by S. A. Logan; seconded by Samuel Freeman.

* * *

The Nova Scotia Farmers' Association asembled at Truro realizing that a very radical change is being made in the laws respecting Public Highways also in construction and maintenance of same,

And whereas a commision has been appointed to known as the Highway Board, such Board to take all monies collected from all sources, also to have disbursement of same with power to appoint superintendents and surveyors in each respective County,

Therefore resolved that this Nova Scotia Farmers' Association urge upon the Highway Board the necessity of appointing efficient men irrespective of their political affiliations and that special consideration be given to the appointing of patrol men for the roads who shall be required to go over their respective roads at frequent intervals and make the necessary minor

(Continued on page 266)

Dairy School For Maritime Provinces

CONDUCTED UNDER THE JOINT SUPPORT OF THE DEPARTMENTS OF AGRICULTURE OF NEW BRUNSWICK, PRINCE EDWARD ISLAND AND NOVA SCOTIA,

—AT THE—

Agricultural College, Truro, N. S.

OPEN TO ANY WHO HAVE HAD AT LEAST ONE SEASON'S EXPERIENCE IN EITHER A CHEESE FACTORY OR CREAMERY, OR BY MAKING SPECIAL ARRANGEMENTS WITH THE SUPERINTENDENT.

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LAST YEAR'S COURSE HAD A REGISTRATION OF 41.

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W. A. MacKAY, Supt. in Charge, TRURO, N. S.

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FEBRUARY 5th, 1918.

DATES OF ISSUE.

February 5-19
March 5-19
April 9-23
May 7-28
June 11-25

THE WHEAT PRODUCTION CAMPAIGN

The call has gone forth that it is absolutely necessary that each and every farmer in the Maritime Provinces produce as much wheat as they can during the coming season in order that there may be a greater surplus left for shipment from the grain fields of the West to our soldier boys in the trenches. The easily available surplus of wheat in the wheat producing countries of the world is far short of the requirements of England and her Allies and so every effort should be made to comply with the request of the urgent call that has been sent out by the men who have to do with the garnering of adequate food supplies for our soldier boys.

In New Brunswick the County Councils are preparing to co-operate with the provincial Department of Agriculture in ascertaining requirements, financing and distribution of the seed wheat that must necessarily be imported if adequate supplies of seed grain are to be within the reach of farmers who will do their bit by responding to the call.

At the time of writing nearly every municipality in the province adopted the plan outlined by the Department of Agriculture viz., the Department of Agriculture will locate and purchase the necessary suppplies which will be held in storage until the early spring when the grain will be shipped, sight draft attached to Bill of Lading, to the Municipal Councils of the respectivee Counties co-aperating. In the meantime the County Councillors will ascertain the requirements of their respective parishes and will place their orders through a contract committee that will keep in close touch with the Department of Agriculture.

To the farmers of New Brunswick we would say secure your seed wheat in your own vicinity if you can. If you fail in this do not delay; place your order in the hands of your Municipal Councillor and your needs will be attended to.

The wheat will be sold for cash or bankable note. Now is the time to place your order. Do it today.

HOPE OF AGRICULTURE LIES IN CO-OPERATION

I maintain the very strongest belief that through the work of the Commission of Conservation illustration farms in Dundas county we shall in the course of a few years be able to point the way to permanent improvement of agricultural conditions in Ontario. The basis of all such improvement must be co-operation amongst the farmers themselves for scientific instruction in regard to the best methods of improving production. Success depends upon the appreciation by the farming community that improvements depend upon themselves, and that, given the necessary scientific aid instruction, they must themselves co-operate and carry on the work in the same manner as men engaged in any other line of business.

The unfortunate feature of farming in Ontario, and in Canada generally, has, so far, been that each additional farmer has jealously regarded himself and his farm as a unit separated from the rest of the community and to be managed without any reference to the views or interests of any other person. As a result, we have found that agriculture can only advance to a certain point. Then progress ceased, and for some years past in the Eastern provinces, agriculture has been at a standstill, if it has not retrograded.

The problem of supplying and handling farm labour, of securing proper scientfic instruction, of improving knowledge of gardening methods, of insisting on proper teaching of agriculture in the schools, of proper study and development of the stock industry as applied to the particular locality, are all questions which can only be solved by co-operation amongst the farmers themselves. Lastly, the fundamental questions of co-operative buying and co-operative selling are those which furnish the solution for the most serious difficulties with which isolated farmers have to deal. It is my hope that the full development of the idea which we are applying in the county of Dundas may have most important practical results.—Sir Clifford Sifton, before Ninth Annual Meeting of Commission of Conservation.

POINTS ABOUT FERTILIZERS

Just as munitions are required to carry on the actual fighting in the war, so have farmers to look to fertilizers to assist them in the production of food, which is the part they have to play in the struggle. The difficulty is to get what is required for while the demand for fertilizers has increased, there are not so many sources of plant food to choose from, nor is farmyard manure likely to increase in quantity or improve in quality. No matter what is wanted in these days, the chances of getting it are enhanced by placing the order early, and this rule is particularly applicable to fertilizers. Even if not wanted until the spring, the advice to buy early still holds good, provided one has a dry place to keep it in, for we are told that at Rothamsted sulphate of ammonia is regularly stored from one year to another without loss or ill-effect. In passing it may stated that there will have to be a certain amount of rationing where crops are concerned, and this on account of the limited supply of fertilizers; therefore, it is up to the farmers to apply manures most liberally on the crops that are needed the most for the

GRADING OF POTATOES TO BE DEALT WITH

The fruit and vegetable committee of the Food Controller's office is considering regulations in regard to the grading of potatoes. The regulations, if adopted, will next year remove from the market all under-sized, scabby, damaged and defective potatoes. Uniform grading by size and quality will save an enormous amount of kitchen waste, and save much freight space; the grower will get from ten per cent. to fifteen per cent. more money for his potatoes, and the consumer will be sure of the quality of those he buys.

Potato grading is compulsory in Great Britain and widely practised in the United States, where its good effects have long been recognized. The benefits arising from potato grading will be even more marked than those derived from the grading of apples.

WHERE RUST RUNS RIOT

If you have allowed the hoes, rakes, spades, scythes and other small garden and farm tools to lie about 'most anywhere, better make a resolution toward reform. It is not only hard on the tools to lie in the grass, hang on the fence or repose on top of the smokehouse, but there is often danger to children and live stock when tools are not properly cared for. If the small boy steps on a rusty rake tooth, or cuts himself on the rusty scythe, he may contract blood poisoning and lose a foot or leg. The doctor bill in such a case, is often enough to more than pay for the time spent in putting all tools in place when through with them. The fact is, it does not take much longer to put a tool in place, for usually the tool shed is near the barn or house, and you usually strike for one or the other of these places when the job is completed.

* * *

It is the plain duty of every farmer to grow more hogs in 1918.

* * *

We have found that a rich father is too often a young man's excuse for being worthless.

* * *

A good wife and health are a man's best wealth.

* * *

He who has four and spends five, has no need of a purse.

* * *

No man will ever reach heaven with his face toward the pit.

* * *

The attention of good farmers everywhere is directed toward securing good seed oats. This seed will be scarce next spring.

* * *

Our forefathers risked their all for liberty. Too many of us are jeopardizing our liberty for profits.

* * *

Loyality has been likened unto the playing of a violin. You have to get in tune before you can play.

* * *

If it is not a habit of yours to watch for new ideas—start now; stop, look and listen and you will not be run across by the engine of defeat.

* * *

There are two crops which cannot, as a rule be grown in the same parish, viz., sheep and dogs. Sheep are most profitable, but dogs are the favorites with too many farmers.

* * *

The person who does his or her best has done everything, but those who have done less than their best have done little, if anything.

* * *

Do you ever read the advertisements in your farm paper? Better do it. There may be something that you want to buy. Always mention the paper you saw the advertisement in. It is the thing to do.

The Feed Situation in 1918

Not Encouraging--Food Controller Still Does as the Big Millers Determine

The inevitable has come to pass. Hon. W. J. Hanna, who has been Food Controller of Canada for the past few months, has stepped down and out and his place is filled by Mr. H. Thompson, of Vancouver. Let it be hoped that the change is indicative that a progressive policy will be adopted in this important branch of the government service and that the personnel of the department will be so arranged that there will be some assurance that pledges given in behalf of the Food Controller will, in slight measure at least, stand some show of fulfillment.

Some months ago numerous organizations in the Maritime Provinces, the members of whom are the farmers to whom Mr. Hanna appealed for PATRIOTISM and production, decided that they wanted to buy feeds co-operatively. The flour mills of the country decided that they would not sell to farmers. It was all right for farmers to raise wheat and other products but it was quite UNUSUAL that they receive back the by-products until various intermediaries were given an opportunity to make the USUAL rake-off.

The millers, however, were not wedded to the USUAL channels in Canada. It was brought to the attention of the Maritime Farmer that these millers, one of whom at least, paid dividends of twenty-five per cent. per year, were shipping large quantities of feeds to the United States. Knowing that the feed situation in Canada would be little sort of desperate this year, the Maritime Farmer on August 18th, 1917, called the attention of Mr. Hanna to this condition and asked that exportation of these feeds be prohibited. But there was nothing doing for four months. On December 19th last an order in council was published prohibiting the export of feeds and forcing the mills to offer all mill feeds to Canadian consumers. Only once was the Food Controller able to nail down these wily gentlemen. The Maple Leaf Milling Company were caught with some bran and middlings and these were taken over by the live stock branch of the Department of Agriculture and distributed. But one lesson was sufficient and since then there have been no loose feeds. That is there is none that any farmer's organization can get a line on.

The food controller, too, in October 1917, promised definitely that farmers would get feeds. Through his chief clerk, Mr. Todd, he declared that the farmers would be looked after and that he would see that they were able to get feed at wholesale prices. Of course nothing resulted, and then another shift was made and the live stock branch of the Department of Agriculture, Ottawa, was brought on the scene and they were to do what Mr. Hanna neglected to come across with. But after one spasm, the movement died a natural death, and every provincial department which acted in good faith on the assurance of Ottawa and promised feeds in car lots, found thmselves victime of a little joke and badly stung. This was fiasco number two.

Joker number three, however, the really and truly rich one. The Food Controller discovered shortly before leaving office, or at least somebody discovered for him, that it would not be wise to force millers to do anything UNUSUAL. Business must be done as USUAL, the big millers claim. To do otherwise you see, might disturb them. It is true that things are not just AS USUAL in Europe. It is true that thousands of farmer's sons have died quite UNUSUALLY on the blood-stained battlefields of France and Flanders. It is also true that the farmers in all parts of Canada have contributed UNUSUAL sums through the Victory Loan and so forth, in order to help market the output of the flour mills of Canada. It is also true that these same farmers were asked to raise UNUSUAL crops to meet UNUSUAL conditions. They have been requested to provide an UNUSUAL amount of pork for the same reasons. But when they ask that their money be accepted in the ordinary way in payment for feeds at wholesale prices, they are told that these millers must go on as USUAL. Nothing must be done to cut the twenty-five per cent. dividend of that big flour mill. That must be as USUAL.

And so joker number three has been put over. A farmer may not buy direct. He produces the wheat but his money is no good. All that is needed of him is his labor and the produce of his farm. It would be quite lacking in professional etiquette for the mills to let him in on the ground floor. Therefore, the millers are to sell to the middlemen, who are to take the cash at the car door, and charge the farmer five cents per bag for taking the coin. Or, if the goods are charged, the farmer will pay ten cents per bag. This is USUAL. The farmer of course, wishes to pay the draft for the feed himself, unlock the car door and save the middleman's toll, but Mr. Food Controller, being convinced that this is not USUAL, will not consent to any such arrangement.

Seriously, is there or is there not an UNUSUAL condition in Canada? If things are UNUSUAL why should not the mills o this country do their share of UNUSUAL things? Are farmers to be the goats all through the little comedy, or is Mr. Thompson prepared to come over and really show that he means business and intends to really see that the big flour mills are made to sit up and take notice? Are men to be conscripted and this sort of thing to be permitted? Surely life is more sacred than miller's profits? And yet we can devise ways of securing men. Is the other problem greater?

Almost four years ago the Maritime Farmer fired the first gun for patriotism and production. This paper then realized the importance of increased production and advocated it. It has never had occasion to change its opinion, but it maintains that the millers of Canada should be forced to do their share too. There should be no discrimination. If the farmer put forth special efforts to save his country, then the miller should exert a little pressure along the same lines. This is an UNUSUAL war and to expect only one portion of the Canadian population to make sacrifices while the big flour mills pay enormous dividends is asking too much.

There has been another ludicrous side to the situation. The Food Controller has been much exercised about conservation of flour. He has declared again and again that unless those of us at home are saving on flour our Canadian army must suffer. Their very lives are at stake. Yet what does this department permit millers to do? They are allowed to make all sales of feed conditional on the buyer taking anything up to 175 barrels to the car of this most precious of all things, FLOUR. Isn't it "perfectly killing." Here are the millers forcing on the public the very commodity which the Food Controller says is one of the essentials of a successful prosecution of the war. And yet the public is asked to regard the Food Controller's branch as a useful institution in checking the consumption of FLOUR.

Mr. Thompson, the new appointee, has an opportunity to make a name for himself. The government behind him can well afford to disregard the pleas of rich milling concerns for the application of USUAL conditions. If he would have the farmer do his bit, and do that bit best, let him see to it that everybody who has money to spend gets a chance to spend it in the lowest market. The real trouble is that millers want to sell flour, the very thing which the Allies need most. Mr. Thompson's first act should be to appoint to his staff men who have the ability to handle big questions. That is what Hoover did and he is getting results in the United States. UNUSUAL conditions there are being met by UNUSUAL methods. A Canadian farmer may buy feed in the United States without the intervention of a toll taker. Isn't it about time that the same conditions were imposed in Canada?

Farmers who are uniting for increased production in the Maritime Provinces should call on the Food Controller and the Department of Agriculture at Ottawa for a square deal. It should be a fifty-fifty proposition, with the USUAL stuff eliminated.

EVEN THE BOYS GOLD-BRICKED

Food Controller Promised Feed at Cost--- There is Now a Toll of From One to Two Dollars

The Canadian Food Bulletin No 7, dated Ottawa December 29, 1917, announces that it is "PUBLISHED UNDER AUTHORITY OF THE FOOD CONTROLLER FOR THE INFORMATION OF OFFICIAL ORGANIZATIONS CO-OPERATING IN THE WORK OF FOOD CONTROL, OR OF OTHER BODIES OR INDIVIDUALS INTERESTED. THE INFORMATION PUBLISHED IS CAREFULLY PREPARED TO ENSURE ACCURACY OF ALL STATEMENTS SO THAT IT MAY BE A PERMANENT AND USEFUL RECORD OF THE WORK OF THE FOOD CONTROL ORGANIZATION IN CANADA."

This is the official pronouncement of the Food Controller on the official standing of this publication. It contains an appeal "Boys will keep Hogs" page nine. Reasons are given why BOYS should keep hogs. This is one of them, published on the same page:

THE QUESTION OF FEED

Pork Can be Produced with Profit.—Hog Feed Available.

Prof. H. Barton, of MacDonald.. Agricultural College, St. Annne de Bellevue, writes on one aspect of hog production as follows.

"Many a man will shout, 'no feed,'—'dear feed,' when the subject of pork production is mentioned. Feed is scarce and dear, but a large amount of feed that hogs can use is available. More can be found, and at prevailing prices pork can be produced with profit. On every farm an din every household there is a certain amount of waste that only the hog can make best use of. Hog feed of this character is of immense value. Shorts and middlings are to be available at cost price. They should be used for hog feeding exclusively and not for dairy cattle for which they are not most economical."

Here is a statement which the Food Controller says is "carefully prepared to ensure accuracy." Definitely and positively the boys, through the medium of Prof. H. Barton, MacDonald College, have been promised shorts and middlings at COST price. The COST PRICE we are now told cannot be enforced, because it would interfere with the USUAL business methods. Of course it is UNUSUAL for the boy to put his small capital into pigs, even on the strength of the PROMISE OF THE FOOD CONTROLLER that "SHORTS AND MIDDLINGS ARE TO BE AVAILABLE AT COST PRICE." Are we in Canada to hand to the boys of the country a gold brick? CAN OFFICIAL CANADA AFFORD TO LIE TO ITS BOYS? MOST WISE PARENTS WILL TELL YOU THAT LYING TO THE WEE TOT IS ABOUT THE POOREST PROPOSITION THAT CAN BE PUT OVER ON THE BOY. THE FFOD CONTROLLER HAS PLEDGED HIS WORD TO THE BOY. ARE THE BUSINESS INTERESTS OF THE CANADIAN FLOUR MILLS MORE IMPORTANT THAN THE CARRYING OUT OF A CONTRACT MADE WITH THOUSANDS OF CANADIAN BOYS? IT IS UP TO THE NEW FOOD CONTROLLER TO SEE THAT THE BOYS ARE NOT GOLD-BRICKED. The information given them has been ear marked "CAREFULLY PREPARED AND ACCURATE." WHAT IS THE NEW FOOD CONTROLLER GOING TO DO ABOUT IT?

Don't neglect the colts these winter days. Too often these youngsters are expected to rough it and as a result they become stunted in growth and their future usefulness is much impaired. Most of the colts on the farm get a good start during the first six months of their lives, from the fact that they get most of their feed from their dams, but after weaning time comes they are not so carefully nurtured. Then is the critical time in their lives and the time when they should be given the most careful attention. It is estimated that a well-bred colt, if properly cared for, and fed the right kind of feed during the first three years of its life, will bring from $75 to $150 more when three years old than one that has been neglected and poorly fed.

HORTICULTURE

ANNUAL MEETING OF THE N. S. FRUIT GROWERS ASSOCIATION.

The Annual Meeting of the N. S. Fruit Growers Association was held at Kentville on Jan. 25th. There was a large attendance and interest was well sustained throughout the session. The Secretary again brought together a large and varied array of talent who spoke most acceptably to eager listeners.

Perhaps the outstanding features of the programme were the addresses of President Blair and Prof. Sanders. As the address of Prof. Sanders will be published in the Maritime Farmer in full, it will only be necessary here to say that it was marked by all that thoroughness and boldness in research which characterizes all of Prof. Sander's work for the fruit growers.

Pres. Blair's address which was one of the strongest we have had from the Chair in recent years aroused considerable discussion, particularly over that part of it which endeavored to ascertain the cost to the Valley farmer of producing a barrel of apples. His estimate placed the cost of producing a barrel of apples for 1917 at $2.68, which is considerably above that which has generally been held. But taking into account interest on capital invested and increased expenses due to shortage of labor and high cost of fertilizers the Pres. Blair's estimate is not far out of the way.

Among the other subjects which came before the Association was the ever-recurring one of spraying. The process of spraying which is so vital to the success of the fruit grower in these times seems to be an art which is most difficult to acquire, consequently more and more of our best talent is each year being concentrated upon it. It is safe to say that while a few of our growers are becoming discouraged over their lack of success in spraying, yet as a result of the work of Professors Sanders and Britain some progress is noted each year in the control of scab and orchard insects.

Among the experiments in spraying which are being conducted by the Departments of Agricultural both Federal and Local, are those with the Dusting machine. A considerable discrepancy in the results of the different experiments conducted was shown but enough work has been done to confirm previous conclusions reached in regard to this method; namely that while the dust spray will control biting insects as well as the liquid spray it is not generally as good in scab control.

The programme as arranged by Sec. Ells also gave place to potato culture and poultry raising, thus recognizing the fact that the majority of fruit growers in the Valley are also at the same time carrying on mixed farming, especially so since the war began. Mr. Paul A. Murphy spoke of the various diseases of the potato and tht proper methods of control. Blight both early and late, he would eliminate by spraying, leaf roll by obtaining seed from parts of the Province not so affected

Other speakers were Prof. Elford and Mr. McIntosh of Ottawa, and Dominion Fruit Commissioner Johnson.

The officers elected for the ensuing year were: F. H. Johnson, Bridgetown, President; H. S. Shaw, Berwick, Vice-President; Manning Ells, Port Williams, Secretary.

CONSERVATION OF BARN YARD FERTILIZER

While the price of Commercial Fertilizers has risen perceptibly since 1914, it is stated that a bushel of Corn or Potatoes will now buy about 35c. more fertilizer than at that time. This of course, is where it continues to be obtainable, but as Cannon and Crops use the same food, a shortage of fertilizer may be expected which will in many cases make it impossible to obtain the same at any price that will return sufficient profit from its use. Six hundred thousand tons of nitrates went to make explosives last year in the United States alone. A million tons of sulphuric acid were also similarly used last year, and the amount will approach two million tons this year.

The tonnage that is to be required by the Allies is tremendous and far in excess of what was anticipated, and this acid will be commandeered by the Government from various sulphuric acid maufacturers. Every ton of acid taken from the fertilizer manufacturer means a decrease of two tons of acid phosphate.

Gradually we are coming to realize that in sulphur there is a fourth "essential plant food element" oftentimes as important as the other three. In a rceent publication from Cornell University sulphur is grouped as a plant food along with nitrogen, phosphoric acid and potash.

The above facts are cited in several recent issues of the "News Bulletin" a publication issued by the Soil Improvement Committee of the National Fertilizer Association, which further states, "It must have taken real heroism to come forward, as Director Thorne of the Ohio Experiment Station has done, with the statement that 'the value of manure or other organic matter in the maintenance of soil fertility is limited by the nitrogen and mineral elements contained.' Even Professor Agee, seasoned fertility campaigner that he is, says it is hard to give up the old beliefs and not continue to see more in the manure than the nitrogen and mineral elements."

In this situation the importance of conserving the original strength and quantity of animal manure cannot be overestimated and the quality of Land Plaster in fixing and retaining the liquid and volatile elements thereof is well understood by those who have used the same.

The following is what is said concerning the value agriculturally of Gypsum or Land Plaster by the Dominion Chemist, Frank T. Smith, M. A. Sc., in bulletin No. 80 of the Department of Agriculture, Ottawa, December, 1914:—

"Gypsum may be valuable agriculturally in furnishing lime for plant growth, as it is fairly soluble in water but since this lime is combined with sulphuric acid and is present in a neutral condition it follows that **gypsum has no value for the treatment of sour or acid soils.** For this purpose it cannot take the place of quicklime, slacked lime, marl or ground limestone, which, as we know, are essentially alkaline in character."

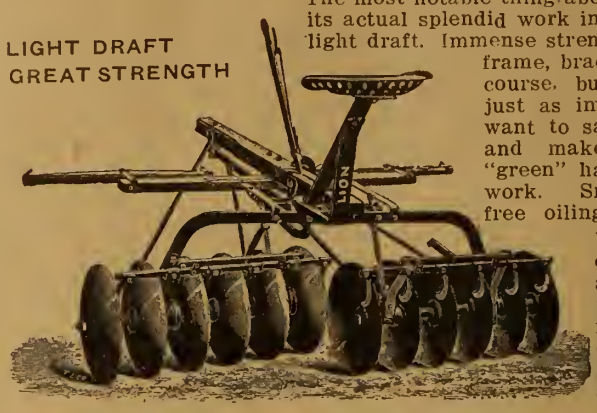
"The two chief agricultural functions of land plaster are its property of flocculating clay and its effect or influence on the insoluble potash compounds setting free this element in forms available for plant use. The first of these functions makes it valuable for the dressing of heavy clay loams, which it improves in tilth by rendering them less plastic, more open and friable, in a word, mellower and more easily worked. The second role that we have spoken of constitutes it an indirect potash fertilizer, though of course, it does not add to the sum total of the soil's potash. It is this property that makes land plaster especially beneficial as a top dressing for clover, a crop that particularly responds to potash manuring. The usual application is in the neighborhood of 500 pounds per acre."

"Land Plaster possesses the property of 'fixing' ammonia and for this reason is largely used in stables and cow barns. Thus employed, sprinkling or dusting the finely ground material in the stalls, it serves to retain the nitrogen of the very readily decomposed urnie and incidentallly to keep the atmosphere of the building free from ammonia, pure and sweet. It is this use of land plaster

(Continued on page 267)

Frost and Wood Thoroughness is Well Illustrated in

The F. & W. Lion Disc Harrow



The most notable thing about it, apart from its actual splendid work in the field, is its light draft. Immense strength is built into frame, braces and discs, of course, but light draft is just as important if you want to save your horses and make it easy for "green" hands to do your work. Smooth running, free oiling, dustless ball bearings, cut down the work at the points where the main frame meets the disc sections. Driver's seat is also well back over the discs.

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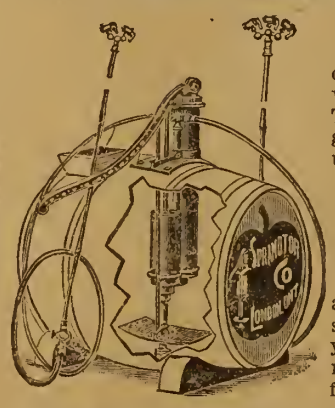

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BUYING BEES FROM THE SOUTH

The purchase of bees without combs from the Southern States in spring, for making good the winter losses and increasing the returns of the apiary, has attracted considerable attention in Canada during the past two or three years, and has been tried out on a small scale in the apiary at the Central Experimental Farm, Ottawa, with the following results.

On May 8, 1916, a shipment consisting of six 1-pound packages was received by express from a dealer in Alabama. It was fourteen days on the journey, and only 17 ounces of bees were found to be alive on arrival. Another shipment consisting of three 2-pound packages each with an untested fertile queen, arrived in good condition on May 9, after only four days' journey. These three lots, after having been supplied with combs and brood from other colonies, produced 433 pounds of honey and built up into five strong colonies fit for wintering.

In 1917 a shipment consisting of three 2-pound pacnages each with an untested fertile queen, arrived in good condition. The three lots were each placed on four combs containing nothing but about 3 pounds of honey, and empty combs were added as needed. Producing a total of 316 pounds of honey valued at $47.25, an average of 105.3 pounds each, they were about as profitable as the regular colonies in the apiary, which gave in 1917 an average of 108.5 pounds of honey each, spring count, and for the five years, 1913-1917 an annual average of 106.7 pounds. The cost of the three lots was $9.75, express charges $1.25, total $11.00. In the fall each lot needed 21 pounds of sugar, costing $2.00, to make it heavy enough for wintering.

Another shipment, also consisting of three 2-pound lots each with an untested fertile queen, was received from Alabama on May 27th, and arrived in good condition six days after despatch. These bees were treated in the same way as the first shipment, but owing partly to the fact that they arrived 18 days later than the first, and partly to a worthless queen in one of them, to replace which a comb of brood was taken from one of the others, they made a much smaller profit, the one that was requeened producing only 4.7 punds, the one that supplied the brood 24.5 pounds and the third 24.8 pounds of surplus honey, a total of 54 pounds, valued at $8.10. The cost of this shipment with express charges amounted to $11.50.

The bees received on May 9 raised a large quantity of brood during dandelion bloom in the latter part of May. This brood produced bees in time to work on clover at the commencement of the flow in early July.

Information received from beekeepers in different parts of Canada, who ordered bees from the south for delivery in 1917, shows that some were disappointed because, expecting the bees in May, they did not receive them until June or July. The delay was caused partly by the exceptionally unfavourable spring for raising bees in the South, and partly by an unprecedently heavy demand. A remedy might be found in ordering early, as most dealers fill their orders, if they are not very large, in rotation. A few bee-keepers reported a large percentage of dead bees on arrival, due to detention at some place on the journey. The season for profit passes before such a loss can be replaced. In one or two of the provinces bees are liable to be held at the point of entry unless accompanied by a certificate that the apiaries from which they were sent are free from disease, and bees on combs are not permitted to enter—By F. W. L. Sladen, Apiarist, Dominion Experimental Farms.

PAPER CONTAINERS FOR HONEY

In consequence of the high price of tin pails and glass jars, an experiment in designing paper containers for granulated honey was commenced in February 1917, at the Central Experimental Farm, Ottawa. Nearly all kinds of honey produced in Canada will granulate hard 6 to 8 weeks after extraction, and in this form they can be conveniently distributed in small quantities in attractive inexpensive containers made of paper.

The most promising result has been obtained by pouring the honey when commencing to granulate into bags made of white bond paper, waterproofed with paraffin wax, the bags having been previously opened out on a wooden block and placed in attractive rectangular cartons, printed in one colour. Two sizes of containers have been tried, one holding 2-pounds of honey, the other 5-pounds. To prevent bulging, the containers when filled were wedged in a box or frame, but it seems that it would be better to pack them before filling in the boxes in which they are to be shipped adn to add small amounts of honey to each by means of a narrow spouted jug and spoon until all are filled, to prevent a possible bulging of the containers first filled. In this way the containers would be handled only once. A convenient size of shipping box would be one made to hold 60 pounds, that is thirty 2-pound containers in 5 rows of six, or twelve 5-pound in 3 rows of four, the box to be made ⅜ of an inch deeper, longer and wider than the carton content to take corrugated paper or other wrapping. By using an extension 4 to 5 inches deep and the same length and width as the boxes, the boxes may be tied on one another to stand while the honey is granulating. White honey gahtered at Ottawa, poured into the bags while thickening on September 20 was perfectly hard and fit for shipment on October 30. The packages seemed to be appreciated by housekeepers, the paper being easily peeled off the honey. The bags that had their bottoms folded three times and not sealed were more satisfactory than those with sealed bottoms, because it was found that they were less liable to tear when opened on the block. Leaking was practically eliminated when the bags in the cartons were filled with thickening honey and were packed at once in the box.

The inside dimensions of the 5-pound carton were 4 inches wide by 3 inches thick by 8¼ inches high. The bag to go inside this was made in the form of a tube 6⅞ inches wide, and 14½ inches long with 3 folds reducing it to 12 inches long. The 2-pound carton was 3 inches wide by 2½ inches thick by 5⅜ inches high inside. The bag to go inside this was 5⅜ inches wide, 11 inches long with three folds reducing it to 8½ inches long.

The cost of the 5-pound cartons printed, was $12.00 per thousand, and the bags for them $12.00 per thousand, total $24.00 per thousand. The cost of the 2-pound cartons printed was $8.00 per thousand, and the bags for them $8.00 per thousand, total $16.00 per thousand. 5-pound tin pails cost, lithographed, $9.00 per hundred, plain $8.00 per hundred, and 2½ pound pails lithographed cost $6.00 per hundred, all f. o. b. Montreal in January, 1917. There is therefore very considerable saving in the use of cartons, both in outlay to the bee-keeper and in cost of honey to the purchaser. Indeed, the saving is somewhat more than the above figures would indicate, because the lighter weight and bulk of the cartons and bags, which are supplied in the flat, reduces the cost of the freight compared with pails and glass jars. Against this saving must be placed the extra time taken in opening and filling the paper bags and cartons.

At the time of writing (Dec. 1917), lithographed 5 lb. pails are being quoted at $12.50 per 100 and the 5 lb. card cartons at $18.00, per 1.000.—By F. W. L. Sladen, Apiarist, Dominion Experimental Farms.

START YOUR GARDEN SEED BOXES

Seeds of early tomatoes and cabbage, as well as cauliflower and pepper, shoulud be planted in a seed box in the house at once. The seed box should be 3 to 4 inches deep, 12 to 14 inches wide and 20 to 24 inches long. A layer of about 1 inch of gravel or cinders should be placed in the bottom of the box, then it should be filled nearly full of rich garden soil, or soil enriched with decayed leaves or manure.

The rich soil beneath the family woodpile or around decaying logs is splendid for this purpose. The soil should be pressed down firmly with a small piece of board and rows made ¼ to ½ inch deep and 2 inches apart crosswise of the box. The seed should be distributed eight or ten to the inch in the rows and be covered. The soil sould be watered and the box set in a warm place in the light, in the sunshine by a window being best. Watetr enough must be given to germinate and grow thriftily, but not enough to leak through the box. If a piece of glass is used to cover the box, it will hold the moisture in the soil and hasten the germination of the seeds.

When the plants are from 1 to 1½ inches high they should be thinned to 1 or 2 inches apart in the row so as to give them space enough to make a strong, stocky growth. If it is desired to keep the plants which are thinned out, they must be set 2 inches apart each way in other boxes prepared as mentioned for the seed box. When the weather becomes mild, the box of plants should be set out of doors part of the time so that the plants will "harden off" in preparation for transplanting to the garden later. A good watering should be given just before the plants are taken out of the box for transplanting, so that a large ball of earth will stick to the roots of each one.

SOW ALL YOU CAN

The earlier you pick your choice of favored brands, the larger choice you have to pick from. The year 1918 will be a noted one for the price of crops and vegetable produce of all kinds.

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PERFECTION Seed & Grain Separator
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The best and latest mill for Cleaning and Grading all kinds of Seed and Grain.
See nearest Agent or write for Catalogue to
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Eureka Potato Planter

Pays for Itself in Labor and Time Saved

One man and team with an Eureka Potato Planter needs no hired help to plant the whole crop. Whether you plant 4 acres or 400, the Eureka Planter will pay for itself many times over. Better than hand planting. Increases yield. Does 5 operations at once, automatically—accurately.

Opens furrow, drops seed any distance and depth, drops fertilizer (if desired), covers up and marks next row. **Furrow opens and seed drops in plain sight**—an equal distance apart, at uniform depth, with **absolutely no injury to seed.** Easy to operate in any soil, made of steel and malleable iron—assuring long life, light weight and few or no repairs.

Write for **free** catalog on this great line of potato planters—the largest line made. 3 sizes, 1 or 2 rows, with or without fertilizer attachment **In Stock Near You.** A success for over 19 years. Whether you are a large or small grower—**write today.**

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DAIRYING.

FEEDING DAIRY COWS PREVIOUS TO FRESHENING

During the next few months a large number of dairy cows will be nearing the freshening period of their lactation, and the way they are managed at this time, in a great measure, will determine their usefulness after that critical time is passed.

During the latter part of pregnancy the foetus becomes very large and imposes such a heavy burden upon the cow in order to properly nourish it and still continue her efforts along the line of milk production, that for the last six or eight weeks she should be relieved entirely of the latter duties so that she may devote all her energies to growing the calf and storing up strength for the heavier obligations imposed at the time of parturition. At about three months from calving the foetus has not assumed any large proportions, but from this time on until delivery, there is a comparatively rapid growth, and the corresponding strain on the cow becomes very great. Most good cows are milking for several weeks after this time, and in order to do any business worth while at the pail she must not only have a very liberal ration, but food of the right kind and of excellent quality.

For the pregnant cow no food will quite equal nice fresh pasture. By this is meant not very young grass, which is nearly all water, but real pasture, six to eight inches high, where she can get a good bite and not have to work hard all day for it, using up nearly as much energy in the operation as the food is worth after she gets it.

Some cows will need a grain ration in addition to good pasture. While still giving milk, heavy producers are likely to consume considerable grain at this time, while others, especially those which consume large quantities of forage will not eat much; hence, it will not do to treat all animals in the same way.

Individuality in the management of the dairy herd counts for as much as any other factor, and the man who does not exert himself along this line is in a loosing game. All rules in the management of the dairy cow, therefore, must be on general principles, which are always open to revision for a single animal.

It is the practise of many dairymen to withhold any grain rations when the cow is dried up. This is usually poor policy; even if the pasture is good, many cows will not eat enough to store up the energy they need, and in order to come into the next lactation with good prospects of a successful year's production they must be strong, comparatively fat and healthy.

At this time of the year and under stable conditions one of the most essential factors of successful feeding is in furnishing the dairy cow with plenty of succulunce; either during her lactation period or while she is dry previous to freshening.

Canadian dairymen are fortunate in being able to grow, in abundance, two of the best crops in the world for this purpose; namely, corn ensilage and roots. Either of these in connection with alfalfa or red clover hay and a suitable grain ration, is very satisfactory, but it is when these are used in conjunction, and with other foods, that the gilt edge of winter feeding is made possible.

As in the case of pasture feeding, the cow should have all she can consume and keep in good health. If she is a heavy producer she will in all probability be quite thin when dried up and there will be no danger of her becoming too fat during the short time she will have to gain between going dry and freshening. A good ration for a thousand pound cow at this time would be about 20 pounds of roots, 20 pounds of silage, 2 lbs. of wheat bran, 2 pounds of ground oats and one pound of oil meal, in addition to all the alfalfa or red clover hay she will eat up clean.

As a cow nears freshening, if she is developing a very large udder the ration may be reduced considerably, all round, and the amount of hay limited also. Some hardy cows will eat enough hay to overtax their digestive capacity when only a small amount of concentrates is given. Moreover, many cows are injured by overfeeding just previous to and soon after calving, and while it is a good policy to get a cow down to working order as soon as possible, time is often gained by going slowly just at this period.

Cows should have salt regularly during all times of the year and while they will not eat nearly so much when dry as when giving a large quantity of milk and especially on pasture, it is essential nevertheless, that they have all they will take; and further, it should be given them every day regularly and not once a week or month, as the case may be.

PRACTICAL STABLE VENTILATION

Dairymen, generally, realize the full importance of pure air to the herd, because they know the condition in which an unventilated stable is found on a cold morning. They know the air in such a barn is bad, and that the damp, frosty barn is an unhealthy place for the cattle. Not only is such a condition injurious to the stable itself, affecting the walls, rafters, ceiling and equipment, causing wood to rot and metal to rust; but most important of all is the injurious effect of the lack of fresh air on the vitality of the animals. Without pure air, they are unable to get the full benefit of their food, the milk production is lowered and the cattle are more subject to diseases, such as tuberculosis.

The dairyman works hard for six or seven months of the year preparing expensive food in the way of hay and grain for winter use. He cannot afford to feed this expensive food during the winter months and fail to provide fresh air so that the animals may properly digest it and turn it into milk. A furnace can be filled with expensive fuel, the fire started and a forced draft used, but if the air forced into the furnace does not contain oxygen, the fuel will not burn properly and much will be wasted. A similar action takes place in the animal's body and unless oxygen is provided by bringing fresh air into the barn, the animal will waste feed just as the furnace waste fuel, and the milk production will be reduced.

To provide fresh air, a good ventilator is necessary—the ventilator is one of the most important items of barn equipment. But the ventilator alone cannot furnish the pure air. Ventilation depends on the proper working out of certain scientific rules, and if not correctly done, the system cannot give the best possible results. The dairy barn, of course, is not the only building that requires ventilation. Pure air is just as important in horse stables, hog houses, poultry houses, homes, factories, etc.

Every system of ventilation depends for its efficiency on the thoroughness with which foul air is removed and fresh air brought in to take its lpace. The motive power on which other systems depend for a continuous upward current in the foul air flues, is a difference in temperature between the air in the stable and the air out of doors. Or in other words, they depend upon the air in the stable being lighter (warmer) than the outside air. The air in the stable being warmer, the air in the inside opening of the outtake flue will be lighter than the air outside and will rise.

The upward movement of air in the flue started in this manner is assisted to some extent by "aspiration"—that is, by the wind blowing across the top of the flue; just as a chimney has a stronger draft when the wind is blowing hard. But where dependence is placed wholly on the motive power furnished by the warmer (lighter) air and by the wind blowing across the top of the outtake, the ventilating system will sometimes not operate satisfactorily in the warmer weather and under certain atmospheric conditions.—By O. .W. Townsley.

He turns pretty slow—but he gets all the cream!

—owing to the wonderful Suction-feed, which insures just as clean a skim when you turn the Sharples Separator slow, as when you turn it fast! The boy might turn the crank only 35 to 40 turns per minute, but he would get just as clean a skim as if his dad were speeding the crank around at 50 turns per minute.

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SUCTION-FEED
CREAM SEPARATOR

—the *only* separator that will skim clean at widely-varying speeds
—the *only* separator that gives cream of unchanging thickness—all speeds
—the *only* separator that will skim your milk quicker when you turn faster
—the *only* separator with just *one* piece in bowl—no discs, easiest to clean
—the *only* separator with knee-low supply tank and once-a-month oiling

The hired man, especially at the end of a hard day's work, will but seldom turn a separator up to regulation speed. And you, yourself, are often "dead-tired" and slacken down unconsciously. All fixed-feed separators when turned below speed lose cream—from 7 to 13 lbs. per cow per year. This loss totals 80 million lbs. of butter yearly in the North America alone—Sharples can save it all!

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Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED 224

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Dr. Cassel's Tablets are the supreme remedy for Dyspepsia, Kidney Troubles, Sleeplessness, Anæmia, Nervous ailments, and Nerve paralysis, and for weakness in children. Specially valuable for nursing mothers and during the critical periods of life. Price 50 cents per tube, six tubes for the price of five, from Druggists and Storekeepers throughout Canada. Do not waste your money on imitations; get the genuine Dr. Cassel's Tablets. **Proprietors, Dr. Cassel's Co., Ltd., Manchester, Eng.**

The publisher of thebest Farmer's paper in the Maritime Provinces in writing to us states:

"I wouuld say that I do not know of a medicine that has stood the test of time like MINARD'S LINIMENT, it has been an unfailing remedy in our household ever since I can remember, and has outlived dozens of wouuld-be-competitors and imitators."

med about pieces of furniture known to our twentieth century civilization. And part of the bad usage is quite unnecessary.

The war is creating a special reason why cream cans should be treated with greater respect. There is a present shortage of tin plate, from which cream cans are made, and in the United States, as well as in Canada, efforts are being made to impress can handlers with the importance of caring for these vessels. One United States publication just to hand, says, "It may soon be impossible to secure more milk, cream or ice cream cans until after the war." If a real famine in milk and cream cans were to occur, the loss to the farmers would be much greater than usual because of the higher prices which are now obtainable for milk and cream.

Here are Some "Cans"

You can avoid using milk or cream cans for wrong purposes. Sometimes people put gasoline in them and ruin them almost immediately.

You can refrain from battering the cans needlessly.

You can return other people's cans, if you happen to get them by mistake. The owner needs them.

You can see that your can does not lie about the railway station. Even though you may not be going to use it at once, take it away and care for it.

You can remind the railway agent that he may help by giving cans as much protection as possible.

You can rinse the vessel before using. It may have been thoroughly cleaned at the factory; but it needs a fresh rinse before using.

You can keep the vessel clean inside. Use a little sal soda occasionally in washing the tins out, if necessary.

You can see that a tin does not stand in a damp place or with moisture inside. Especially at the end of the season, when the cans are being put away, dry each carefully and store under cover in a dry atmosphere.—By L. A. Gibson, Dairy Commissioner for Manitoba.

INJURIES TO COWS' TEATS AND UDDERS

Prevention of injury to cows' teats and udder is most important, says M. H. Reynolds, veterinarian, University Farm. Injury may be caused by dragging over high door sills, by hurrying the cows from pasture when the udder is full and by allowing them to lie on cold, bare cement floors. The teats, especially the hind teats of low-hanging udders, are sometimes injured between the cows' hocks and the floor when the cow rises.

If the injury is slight, there may be only a bit of dry blood on the end of the teat and the cow may be a little harder to milk than usual. Such cases usually heal promptly, but if the bruised end becomes infected the teat canal and the udder may become inflamed. Sometimes the end of the milk duct is permanently damaged. A severe bruise may result from a teat being stepped on by a cow in a neighboring stall, while the cow is lying down, and if she jumps up suddenly actual tearing may result.

The treattnmeent varies greatly according to case. Conservative treatment will often save teats that are only slightly injured. Long continued bathing with hot water and gentle massage, if given early, will often open a closed canal. Much less damage may result from leaving milk in an injured quarter for twelve or even twenty-four hours than from an attempt to force open the end of an injured teat with a milk tube or probe. When teats are badly damaged, a competent veterinarian should be called.

Repeated chilling of cow's udders, especially by washing and then exposing them to the cold air, often causes trouble, says Dr. Reynolds. The canal becomes partially blocked, making milking difficult. Small masses of flaking material appear in the milk. In some cases the end of the canal is partly or wholly closed by a scablike formation. Considerable irritation of the skin, particularly around the base of the teats, will usually be noticed. The remedy is, of course, a different method of cleaning the udder, in cold weather.

In all cases of udder trouble, where the vessel is inflamed the best remedy is simply warm water applications supplemented with vigorous rubbing with camphorated oil. This liniment may be procured at any drug store. Extract of belladonna also is an excellent embrocation to apply for inflammation. Bathe the udder in water as hot as the hand can bear. It alone will reduce the swelling if continuously applied.

THE NEW DE LAVAL CREAM SEPARATOR

Will Give You Greater Capacity, Longer Wear, Better Service, Bigger Value

THE bowl of the New De Laval has greater capacity for a given size and a given speed than any other. The experience of thousands and thousands of users has proved that a De Laval will outlast and outwear any other make.

Look well to service when you buy a cream separator. That means more than anything else. That should include not only a good working and reliable machine, but the right sort of attention and interest on the part of the seller, not only at the time the machine is set up but as long as you continue to use it. De Laval service is well known. You can depend upon it.

Value depends upon the amount and quality of service the separator gives you—what you get out of it. You get more value for your money when you buy a De Laval, because it will give you more and better service than any other separator.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below

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MONTREAL PETERBORO WINNIPEG VANCOUVER

COST OF KEEPING A COW

The New Hampshire Experiment station has compiled figures of cost of keeping a cow a year and of producing a quart of milk from the records of cow-testing associations and from their own herd as follows: Cost of feed, $73.03; labor, $32.33; delivery, $7.18; housing, $9.70; depreciation, on cow, $8.83; bedding, $4.00; bull, $3.79; taxes and interest, $4.55; ice, coal and wood for heating, $2.17; veterinary service and medicine, 87 cents; tools, utensils, salt, etc., 53c.; cow-testing association expense per cow, $1.40; total, $147.47. The cow is credited with manure worth $15.00, and a calf worth $3.00, total $18.00, leaving the cost item of $129.73.

Massachusetts Agricultural College, in a similar experiment, found the cost to be $146.04, and the Connecticut Station to be $149.07.

LIVE STOCK.

SUMMARY OF REPORT OF COMMITTEE

(Canadian Swine Breeders' Association)

The Committee appointed by the Executive of the Canadian Swine Breeders' Association consisting of the President, P. J. McEwen, Wyoming, Ont., J. E. Brethour, Burford, Ont. and the Secretary, spent the week ending December 22nd, 1917 in the States of Illinois, Iowa and Indiana. In order that they might have a full understanding of the methods by which the breeders in the corn belt have been able, in the last few years, to hold so effectively in check the plague of hog cholera.

In the United States two treatments are used whereby hogs are immunized against cholera, the "single" or "Serum alone" and the "double" or "Simultaneous". Serum is obtained from hogs which have been not only immunized but hyper-immunized, and when injected into a pig it will render only a temporary immunity, covering a period of five or six weeks. Serum cannot set up the disease in healthy hogs and consequently its use does not expose a herd to any danger. Virus, on the other hand, is a preparation of the blood taken from cholera hogs. It will, in susceptible pigs, produce the disease.

The single, or serum alone, treatment consists of the inoculation of swine with serum to establish a temporary immunity. In the double, or simultaneouus treatment, serum and virus are injected at the same time, imparting to the hog a lasting immunity to cholera.

The first place visited was Ames in the State of Iowa. The Division of Veterinary Science at Ames maintains and operates a laboratory for the production of serum and virus. Dr. Cole, who has been in charge of this plant for four years, was interviewed on the subject which the committee were investigating and he imparted a great many interesting facts. Some of these were: "A Vaccinated pig will not transmit the disease unless the pig gets sick." "All the show men and 99 per cent of the breeders of pure bred hogs in Iowa double-treat."

Both Dr. Cole and Dr. Stange, who is Dean of the Division of Veterinary Science expressed themselves wholeheartedly in favor of the double treatment and neither tried to cover up any defects peculiar to this method of prevention.

Needless to say, the College herd of swine was double treated and Prof. Pew, head of the Animal Husbandry Department, strongly endorsed its uuse.

From Ames the delegaton journed to Davenport, Iowa, where they were met by the hospitable proprietor of Iowana Farms, Col. French, and the genial and efficient Superintendent, Dr. Smith. Pure-Bred Holstein cattle and Berkshire swine have been developed to a remarkable standard of excellence at Iowana Farms, and it was indeed a pleasure to inspect such wonderful herds where the tuberculin test for cattle and double treatment for hogs is practiced so thoroughly. The herd of swine, about 500 in number, were said to be all immunized and the Committee agreed that they never saw a more thrifty or healthy looking bunch of pigs anywhere. A report of the methods followed in housing, yarding and feeding would be instructive, but space will not permit. In the neighborhood of 100 sows are farrowed each year and all breeding stock sent out is guaranteed "cholera-immunized." They are shipped to practically all States of the Union and no one has suffered. When asked for an expression of opinion regarding the double or simultaneous treatment, Col. French made the following statement: "Six years ago I instructed my Manager that unless some protection against hog cholera could be found to cease breeding swine. After investigation at our State College and at Washington, we became convinced that the double treatment was trustworthy and we inoculated $40,000 worth of hogs with serum and virus. We have had no outbreaks of the disease and none of our customers have suffered. In one year the loss from hog cholera in our State, (Iowa) was reduced from $30,000,000 to about $3,000,000. Washington recommends the double treatment and without it we could not maintain a large herd of swine."

The Iowana herd was itself a remarkable endorsation of the double treatment.

The next stop was at the farm of W. S. Corsa, Whitehall, Illinois, where Berkshires are a specialty but where a laboratory is also operated in the production of serum and virus. The immense herd yarded under ideal conditions, were all double treated and gave all the evidence required in support of the method. Mr. Corsa said that he could not continue breeding if he could not double treat, and that he was obliged to treat in order to sell his stock.

In the State of Indiana the Committee endeavored to get the views of the out-and-out farmer in respect to double treatment. Boone County, the leading County for swine in the State, was visited and there two farmers were interviewed. It was learned that the farms averaged about 100 acres and that each farmer keeps about six brood sows. The general practice is to have all sows farrow in the spring, while about half of them are bred back to litter again in the fall. This works out in the neighborhood of three litters in two years per sow. Joseph Beelar, a farmer who buys and feed extensively, spoke favorably of the double treatment and said that without it as an insurance he would have to double on his money one year for fear of losing it all the next. If the pigs are not immune when he brings them home, they are double treated, and kept by themselves until danger from any "breaks" is past. J. W. Brendel, a prominent breeder, endorsed the double treatment. He stated that for a period of thirty years prior to the advent of the double treatment his loss would be as high as 30 per cent., but for the last six years his loss would not exceed one per cent. "Everyone does not vaccinate in this County," Mr. Brendel said, "but the immune herds act as a bucer, checking the spread of the scourge and thus preventing heavy loss." Following are some of the arguments and opinions advanced by these two Boone County farmers: When breedings hogs can be rendered immune there is greater opportunity to raise the standard of quality because the stock is not periodically destroyed. The foundation of the herd should be maintained. When the veterinarian visits the farm to inspect or treat hogs, he often points out necessary changes in sanitation and conveniences that benefit the farmer and render the industry more profitable for him. The sentiment or belief in Boone County is that immunized hogs are not carriers of the disease. At auction sales, those who can make the statement in their catalogues that the hogs to be sold are vaccinated. This helps rather than injures the sale, and many farmers with non-immune herds are buyers. Mr. Brendel himself did not vaccinate his young stock in 1917 and he considered that he lost $15 per head at his fall sale, because he was not able to guarantee his young hogs immune.

During 1917 the State of Indiana, through the State Veterinarian, Dr. Northrop, collected 55,000 shoats in the stock yards where being offered for sale and sent them back to the country to be fed. These pigs averaged around 100 pounds each and if a special effort had not been made they would have been sacrificed. They were all double treated, dipped and shipped in disinfected cars to farmers who would take them to finish. These shoats gained one and a half pounds per day on the average, and were usually returned to market after they had gained 120 pounds, or at the end of an 80 day feeding period. The spread in price amounting to 4.4c per pound was satisfactory, and the farmers profited. The facts of the case bearing on the matter in hand are, that the loss in these double-treated hogs thus handled was less than one per cent., and this from all causes.

While in the State of Indiana, The Deputation visited the plant of Pitman-Moore, where serum and virus are produced in large quantities. Here the Superintendent, Dr. Roberts, spared no efforts to demonstrate every operation in connection with the manufacture of the product and showed the party through all branches of the institution that they might not fail to witness any step in the production of serum and virus. The cleanliness of the plant, as well as the sanitation of the surroundings, were beyond criticism. Lengthy comment on the equipment and methods used would be somewhat technical and out of place here, but the party were impressed very much by the despatch with which every operation was performed and the exhaustive efforts made to turn out a potent and clean product. Government inspection was very rigid, as evidenced by the number of federal inspectors stationed in the different branches.

A few notes as to how serum and virus are made should suffice. To obtain virus young, healthy pigs are inoculated with virus alone in order to set up the disease. In about seven days they are killed and the blood from them is filtered. The filtrate which contains the disease producing properties is mixed with a percentage of carbolic acid as a preservative and stored in a cool place. Every hog has a number, and a chart is kept on which are reported the temperatures and all information concerning him when both dead and alive. After being bled he is "posted" (brief for post mortem examined) and sent to the tank. Any evidence of tuberculosis or other contagious diseases would at once condemn the product of his blood. To test the potency of the virus a pen of eight pigs are used; six receive both serum and virus, while two are injected with virus alone. The two virus pigs should develop the dis-

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Stock Specific
This popular animal regulator and fattener is being fed to stock in thousands of stables every day during the winter. It is good for cows, steers, horses, sheep and swine. It tones up the entire system by improving digestion, and purifying the blood. Maximum nourishment is obtained from all food eaten when our Stock Specific is fed regularly.
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Feedmen everywhere carry it in large and small packages. Ask for our 80-page booklet.
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Made of heavy Open Hearth steel galvanized wire with all the impurities taken out and all the strength and toughness left in. Every wire is crimped making the fence into one continuous spring. Top and bottom wires are extra heavy. Will not sag. Requires less posts than ordinary fence. Absolutely guaranteed.
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Agencies almost everywhere. Agents wanted in all unassigned territory.
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PEERLESS THE ALL AROUND FENCE

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ON FACE AND BODY.

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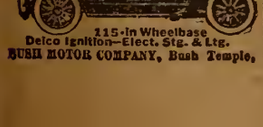

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115-in Wheelbase
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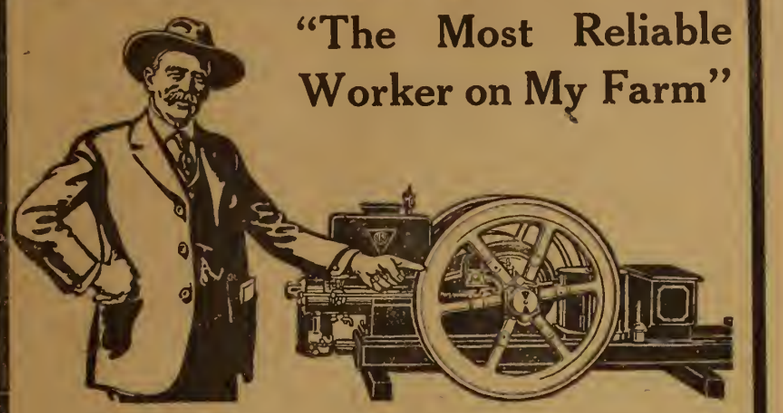
BUSH MOTOR COMPANY, Bush Temple, Chicago, Illinois

ease if the virus is potent; and if the virus is potent, any "breaks" in the remaining six would show something wrong with the serum.

In the production of serum the hog is first immunized in the usual way by vaccination with serum and virus. In the vicinity of 100 days he is "hypered", or hyper-immunized by injecting into a blood vessel of his body 5 cubic centimeters of virus per pound live weight. This amounts to approximately one quart of virus to a 200 pound hog and at the plant of Pitman-Moore, it is injected through a blood vessel in the ear, by what is ostensibly a very simple operation. This produces a "hyper" or hyper-immunized hog, from whose blood the scrum is obtained. About ten days after hypering the hog is tail-bled and four to five c. c. of blood are drawn per pound of live weight. In seven days the hyper is tail-bled again and a similar amount of blood is extracted. At the expiration of the next seven days the hyper is killed and all his blood is preserved. In killing, about 2,600 c. c. of blood is obtained from a 240 pound hyper. The carcass is posted, and after passing inspection goes into the cooling room and later is processed or cured for human consumption. It is Government approved meat, healthy and wholesome in every detail. After a hog is hypered, it must gain in weight until killed in spite of the tail bleeding. The same record is kept of each individual as in the case of virus pigs. The charts then form the office records and all serum and virus, which must have its serial number, can be traced to the animal from which it was taken. Laboratory tests are then carried through and a thorough bacteriologicals examination made of the product. All hogs are prepared for bleeding or killing just as carefully as a human patient is "processed" before an operation. The Government sits constantly on the job and cleanliness, sanitation and disinfection are a religion with Dr. Roberts.

On the return to Canada, the Committee interview Dr. Torrance, Dominion Veterinary Director General and consulted with him as to what changes he might be able to recommend in our quarantine laws. Dr. Torrance assured the committee that he would recommend the following changes.—That the present regulations dealing with the importation to Canada of pure bred swine be changed so as to allow double-treated pigs to enter Canada, providing that the pigs were sold at least thirty days after double-treating and that they would be subject to a thirty days quarantine at the port of entry. Also that where any county or counties desire to use the double treatment, in controlling hog cholera, that he would recommend that permission be granted to such county or counties, always subject to supervision and quarantine.



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50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

CARE OF CALVES IN SUMMER

P. H. E. writes: "I have read with interest your several good articles on the care of calves. I thought that the following account of my experience would be helpful.

"Careful attention should be given to the care and feeding of young calves during the summer months. The weather is hot and the milk will sour quickly if left exposed to the heat. Fresh skim milk contains the protein needed for the best growth of the young calf just the same as whole milk, and the carbohydrates can be supplied in another form, so I have always found it advisable to take the young calf away from the cow as soon as it removes the first milk, then after a short period of feeding whole milk start them on skim milk fresh from the separator.

"While of course, prefer to have the cows freshen in the fall, there are always bound to be some cows freshen in the summer. do not think it best to let the young calves be exposed to the hot sun, but provide good shade for them. Under the trees where there is plenty of good grass is an excellent place to put them, then they soon get to eating the green grass and there is sufficient breeze to keep them cool and drive the flies away. A constructed shade will do if no trees are to be had but it is less desirable.

"Every effort should be made to keep the pails clean in which the milk is fed. A little milk left in the bottom of the feeding pail will be sour before night, and use of such a bucket in feeding will result in scours or other troubles. I never feed old milk to the calves but feed them the fresh skim milk immediately after it comes from the separator; it is warm then and makes a good nutritious ration.

"Cleanliness sould always be observed about the calf barns and fresh, clean bedding supplied each day. If the yard is inclined to be low and muddy it should be filled in and not permit the calves to walk about in two or three inches of muck. Such a yard breeds flies and is not fovarable to strong growth."

GET RID OF THE LICE ON CALVES

Calves infested with lice do not thrive. Frequent examinations should be made to make sure lice are not present on the calves or in the barn.

If lice are discovered the first thing to do is to get entirely rid of them.

This necessitates a complete cleaning of the barn and the disinfection of it by a thoroughly spraying every crack and corner ith a 5 per cent. solution o fcoal tar dip. The calves should be washed with a solution of coal tar disinfectant ranging in strength from 3 to 5 per cent. If this is done in cold weather the calves should bc rubbed with dry cloths and kept blanketed until dry to prevent their catching cold. Crude oil may be used instead of coal tar disinfectant by carefully and thoroughly rubbing it over every portion of the body.

These treatments will not kill the nits or eggs that may be present so that the barn disinfectant and the treatment o the calves must be repeated in esven or eight days. In this manner the calves and the premises can be rid of these abominable growth destroyers.

Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Address

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BOX 309 WINDSOR, Ontario

THE HORSE

WEANLINGS IN WINTER

The time when weanlings should be put up and fed depends on their age, the range and their condition at the beginning of the winter months. Let us leave to one side those foals which have been and are to be continuously fed for the greatest growth, and consider the ordinary farm foal without the inheritance of ton weigth, but whose usefulness and profit depend on maturing to from 1,500 to 1,800 pounds.

In a moist climate, where all the grain that lies out will sprout and be lost, conditions are different from those in a dry climate where grain as a rule will be preserved, even though it may weather. In such dry fields horses find a great deal of picking and there is some green alfalfa mixed with the old until November or December. Indeed the close-feeding sheep will often find enough green sprouts on which to bloat quite late in the season.

I remember one man who had quite a reputation for raising big horses and medium sized mares and by large stallions, who did not put up his early weanlings until Jan. 1 to feed them grain. But he was sure to have them in by that time and the late-dropped foals earlier. On this farm little excepting grain and alfalfa was grown, as there was no late water. All the horses were turned out immediately after harvest into knee-high alfalfa and the considerable gleanings of the grain fields. Long before winter came both young and old were in full coat and as fat as seals. There were only about 20 horses on the 160 acres, and between strawstacks and alfalfa they found plenty of nutritious feed.

While it is a good live stock axiom to keep stock growing all the time, it si none the less true that horses will grow ahead of their age where there is plenty of feed. In other words, they can be advanced about 6 months with 90 days' feeding, when conditions are favorable, and reach early maturity by the heavy feed route. This is less true of weanlings than of yearlings, two and three-year-olds. At the same time, if they are closely watched, they may be left out so long as their demeanor indicates thrift and contentment.

The weight of an animal is not suffiecient indicatioin that it is doing well. Long before there is any perceptible shrinkage a stockman should be able to tell that animals are merely holding their own and drawing on their easily reduced inside fat. Excessive inside fat is a species of degeneration inimical to the race horse when it goes into training or to the over fat horse suddenly thrown into the plow, but animals at liberty seem to be able to endure quite a bit of it and remain not only healthy but exuberant with this provision for future needs.

When feeding is begun too late growth is lost and horses mey shed their coats at a time when they still need them, especially if the hair has become dry and dead, having ceased to take up oil through its roots. It would be unkind thoroughly to clean a horse and leave him exposed to the elements, but my experience is that there is a medium between this and allowing the skin action to stop altogether. I believe that an entire clogging of the pores is detrimental to horses. About once or twice a week I like to brush weanlings moderately, without removing all the scurf, which indeed might prove a week's job. A slight stirring up of dead matter at the hair roots stimulates healthy skin action. The weanlings like it and it gentles them by pleasant association with human company.

At the same time feet can be looked over and kept in shape, saving many a crooked ankle or wrong set of bone. If there are any lice they can be attended to and the sapping of the life blood of the youngster stopped. Continuous an dhealthy excretion through the skin should be constant for best health, and this will largely depend on the feeds used and the amount of exercise taken.

Few people grow carrots, though they are among the most productive crops and are coming into use for cattle feeding in Colorado. Like other roots they have the disadvantage that they may become frozen. Bran, barley and flaxseed can be procured on every farm, however. Any of these well scalded and fed twice a week will have a beneficial effect. The flaxseed may be ground and fed with the dry grain, a teaspoonful or a little more for weanlings at a feed. Even with the flaxseed a couple of feeds a week of scalded barley will not come amiss, especially with weanlings on strong or dry feed, barley when scalded, having a beneficial effect on the intestinal tract. If the barley is well covered with boiling water in the morning and kept in a moderately warm place, it will be ready to feed at nigth. It should be soft enough to flatten fairly easily between the fingers.

Of course bran mashes are good, but I do not believe they have as beneficial an effect on the digestive tract as the flaxseed or scalded barley.

Potatoes are one of the best feeds and promote shedding in the spring or to clean up the skin of a bunch of dirty horses, as they have a special action on the skin. A few horses will be found that will not eat them at all, but it is mostly when first offered. A small quantity can be choped into the feed until they get used to them.

If the horse droppings are about as if they were on sound grass, there need be little fear but that all is well, and the feed being sufficient, they will make good growth.—L. Oglivy in Breeders Gazette.

CHILLS, COLDS AND CATARRH

Never neglect to treat the early stages of a cold or chill in the horse. Unobserved or uncared for, itmay be followed by catarrh, inflammation of the windpipe, followed by chronic cough, thick wind, roaring, bronchitis, and pneumonia. Or the body by loss of vitality may offer only a feeble resistance to the invasion of strangles, influenza and glanders. The organisms that produce these diseases are frequently to be found in the neighborhood of stables, probably in a dormant condition, but always ready to obey Nature's first law, which is "increase and multiply." Probably there is no greater fallacy than to suppose that cold as shown by the thermometer is the only cause of a catarrh. Closer observation has taught us that satarrh is just as frequent in warm as in cold climates, that it is more severe and frequent in the late spring and early autumn than in mid-winter, that rain, fog, extreme cold alone will not produce it, and that the disease is an infectious fever, and is caused by the entrance into the blood stream of two or three different germs. In a pure atmosphere a horse does not contract a true catarrh. The animals in polar expeditionns were free from it, but fell victims when ther returned to civilization.

A horse well fed, with a natural coat on, and an open shelter available rarely suffers, but placed in a hot, dirty, badly drained, ill-ventilated stable, and then trouble begins, and if the owner trusts to his groom or carter the evil will be accentuated by the closing of all apertures that may admit fresh air, so that a simple catarrh will develop into a serious one, because complictaed with auto-toxins. A draughty stable or a hot stable are both evils to be avoided, and plenty of insanitary stables by the expenditure of a few shillings and the labour of a man who can use his hands might be made proof against many respiratory diseases in the animals. Is a horse to be neglected then, even when the stable is perfect? Certainly not. The skin of the horse is plentifully supplied with sweat glands, even more than in many of our domestic animals, and if the horse has nothing to do but slowly potter about a field he does not sweat. But put him to work and then the internal heat of the body is increased, the sweat glands being stimulated into activity, pour out their secretions, and fatigue toxins accumulate in the blood. The British navvy takes off his coat while at work, but when at rest he carefully puts it on again. Whenever a horse comes in from work, whether wet or dry, let him have a good wisping. Apply no water to the legs or feet, but the latter can be examined for gathered stones, etc., without washing. Then if cold or wet, bind bandages or haybands on the legs, and if a heavy coat put a few wisps of straw under the rug to allow the sweat to escape.

A sudden change to a heated atmosphere may be more dangerous than the reverse. Independently of the skin action there is an enormous respiratory surface in the lungs of many hundred square feet, and the changes in the circuation of the blood and imperfect oxidation caused by heat and cold try the horse severely at times, causing also sympathetic troubles in the liver and kidneys. It is quite possible to contract a simple mechanical cold from disturbances of equilibrium in the various systems of the body. In a few hours with appropriate care it will pass off; but, as I remarked before, in the majority colds are infectious and due to micro-organisms. The first effects of a cold is to drive the various antibodies—the defenders—from the skin and mucous surfaces, these temporarily leaving their posts (unless a reaction sets in(and permitting the invaders to obtain entrance.

Symptoms of Catarrh

These are a staring coat, shivering, coldness of ears and extremities, a dull, depressed look, loss of appetite; later on sneezing, a slight discharge from nostrils, afterwards becoming thicker; in fact, the name "catarrh" is of a Greek origin, and signifies to "flow down." A few hours after the commencement of these symptoms fever will be present, at first not more than two degrees, and here let me advise all horse-owners to purchase and use a clinical thermometer. This inexpensive instrument, used in hospitals in the treatment of humans, answers all purposes, and costs from any chemist not more than 2s. In using it, set the index moisten the bulb, stand on the near side of the quarters, hold the tail on one side, and with the left hand introduce the thermometer into the rectum within an inch of the top, and retain it there for two minutes, observing the results. An elevation of 2 deg. over 100 deg.F. indicates fever, and the animal must not be considered safe. If the temperature persists at 4 deg., put the case under your veterinary surgeon's guidance. The wise man will always know his limitations and recognize the fact that the perofessional, from his long and specialist training, must always be superior to the mere amateur or charlatan.—English Vet.

LAMPAS

"I have a valuable young mare of five years of age, and she always has lampas growing over her teeth. I have bled her often but it does not seem to do her any good. Please let me know what I sould do to cure her.—J. R."

This condition is common until after five years of age (when dentition is complete). The condition does little or no harm. All that can be done is to scarify the gums to allow escape of a little blood.

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WORMS — DIFFICULT URINATION

"(1.)—I have a mare six years old, in foal, and she is troubled with worms. What do you advise me to do for her?

"(2.) We have a driving horse three years old, and keep the sheath well cleaned. He attempts to urinate quite frequently, appears to be pained, will move about, then urine drops from his sheath after a while. He sometimes makes his water quite natural. It is not a case of too frequent urination so much as the unnatural way. We have given him a medicine. His water appears to be all right.—A.B.C."

(1) Mix equal parts of powdered sulphate of iron, sulphate of copper, and tartar emetic. Make into 24 powders, and give her a powder every night and morning. After the last has been given, give her 1 pint of raw linseed oil.

(2) The symptoms nidicate calculi (stones in thebladder). An examination by a veterinarian would probably confirm the diagnosis. Unfortunately it is a condition in which the administration of drugs has little or no effect and an operation is seldom attempted. The calculus that is causing trouble may enter the urethra and be passed off, or may become fixed in the tube when it could be located by a veterinarian and removed by an operation. About all that can be done is await developments.

CHRONIC INDIGESTION

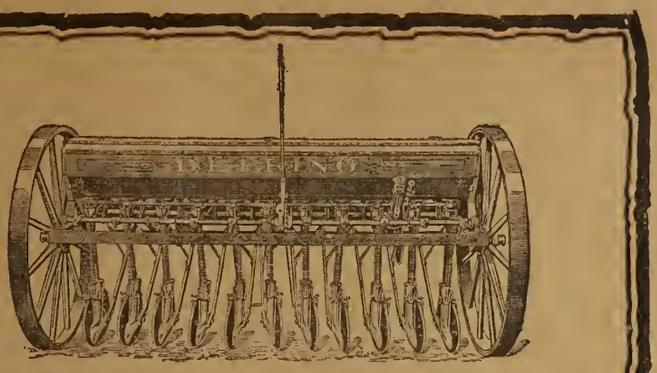
Veterinary Editor,—"I have a mare nine years old that is thin in flesh, and long and rough in hair. She is well fed on good hay and about three gallons of oats per day when she is working. At times she feeds well and has a good appetite and at other times she eats very little hay. She was always in good condition until about a year ago, when she began to fail. I got her teeth filed but it did not seem to doher any good. Her bowels are irregular and she evacuates often and a little at a time. Would she have indigestion? Please advise me what to do for her.—W.R."

Have her mouth examined by a veterinarian and if necessary, have her teeth dressed again. Purge her with 8 drams aloes and 2 drams ginger, and follow up with a tablespoonful three times daily of equal parts of powdered sulphate of iron, gentian ginger, nux vomica and bicarbonate of soda. See that everything she is given to eat is of good quality and given in only reasonable quantities, and add to her drinking water one-puarter of its bulk of lime water.

UNTHRIFTY HORSE

"I have a horse eight years old. Last spring he weighed 1,500 pounds, but at the present time he weighs only 1,250 pounds. He has a very good appetite and he eats as much bedding as he can reach after eating his hay, but the feed does not do him any good. At plowing this fall he would go at it a fe wrounds, then he wouuld get very weak and almost refuse to go. He makes water four or five times during a half day's work. I will be much obliged if you would tell me the cause of the trouble and a remedy.—B.H., Thamesville, Ont."

The symptoms indicate nonassimilation of food. It is probable that his teeth are in such a condition that he cannot masticate properly. Have his mouth examined by a veterinarian and his teeth dressed if necessary. Mix equal parts of powdered gentian, ginger, nux vomica and bi-carbonate of soda and give him a heaped tablespoonful three times daily. He eats too much bulky food. Bed him with sawdust or shavings. Give him a limited quantity of hay of first-class quality, and feed liberally on rolled oats, with a feed of bran twice weekly. Also give a couple of carrots or a mangel or a turnip once daily, and give regular exercise of light work.



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EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

SCRATCHES—FEEDING HORSE

Veterinary Editor,—"(1) would you kindly tell me what is good for scratches?

"(2) What should I feed and how much should I give to a horse that is not doing very much all winter?—H.C.B."

(1) Purge horse with 6 to 8 drams aloes (according to size) and 2 drams ginger. Follow up with 1 to 1½ oz. Fowler's solution of arsenic twice a day for a week. Keep patient in dry, comfortable quarters and dress the heels three times daily with oxide of zinc ointment to each ounce of which has been added 20 drops of carbolic acid. If the heels become too moist, dress 3 times daily for a few days with a lotion made of 1 oz. each of acetate of lead and sulphate of zinc to a pint of water. The condition of the parts will indicate which should be used. Do not wash.

(2) A good ration in such cases would be about ½ lb. each of good hay and good straw for every 100 lbs. of the animals weight, and ½ lb. eacr of rolled oats and bran in the same proportions. This constitutes a day's ration to be divided into three carrots or a mangel or turnip once daily.

BLIND STAGGERS

"I have a mare 14 years old as good as ever, only she takes the blind staggers once in a while. I would like to know if there is a cure for it, or if there is anything I can give to stop them before they come on.—Subscriber.

This is usually caused by the brain becoming temporaaily affected as a result of digestive trouble. Purge her with 8 drams aloes and 2 drams ginger, and follow up with a dessert spoonful three times daily of equal parts nux vomica and gentian. Feed food of first-class quality and give a few roots daily. If constipation occurs give a pint of raw linseed oil. If poshearty meal. If working regularly, give no hay at noon, and little in the morning. Supplement the want of hay with an increase in the grain ration.

SCRUFFY LEGS

Veterinary Editor,—"I have a very valuable colt that has scruff on his legs, and he stocks up a little. Kindly tell me how to cure him. — Subscriber."

Purge him with 3 to 6 drams aloes (according to size) and 2 drams ginger, and follow up with 1 to 3 drams nitrate of potassium twice daily for four days. Make a solution of corrosive sublimate, 30 grains to a quart of water. Groom and brush the legs thoroughly two or three times daily, and once daily heat a little of the solution to about 120 degrees Fahr. and give the legs a thorough washing with it, being sure to get it well rubbed into the skin. Rub the legs well after washing and keep him warm and excluded from drafts until they are thoroughly dry.

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POULTRY.

SPECIAL VS. SIDE LINE POULTRY PRODUCTION

(Experimental Farms Note.)

At this time when economical production is of first consideration, the question of whether production should be increased by encouraging the number of poultry farms or by increasing the flocks kept an farms and in backyards in the towns and cities, becomes of special interest.

Poultry Specialist

That the poultry specialist usually gets better results than the farmer, goes without saying. He gets better results because he has to; if he did not he would soon be out of business. He has nothing but his poultry to depend on; he must show a profit. It costs him so much more to feed his poultry than it does the farmer that hi sonly salvation is increased production. He must get it or fall by the wayside—one of the failures in the poultry business.

With the present high and ever ascending prices of feed, it is becoming more difficult for the specialist to show a satisfactory profit so that we must turn for increased production to sources where the feed problem is not s oacute. This brings us to the mixed farm where a flock is kept as a side line and to the town-dweller.

Farm Flocks

Every farm in the country should carry a flock large enough to make the best use of the unsalable grains, vegetables and waste milk. There are few farms that could not to great advantage carry a flock of at least one hundred hens. One member of the family —preferably one of the younger members— should be given full charge. Careful records should be kejt and all wasters promptly disposed of. In this way the production may be greatly increased without any corresponding increase in cost.

Most of the work is done by one of the younger members of the family. It will interfere very little with the general farm work. It will generally be necessary to purchase some feeds to supplement those available on the farm, but by so doing much of the lower grade products may be fed to produce a greater profit than if sold or fed to any other live stock.

The Back-yard Flock

The greatest hope for increased production at the present time lies in the back-yard flocks. There is no reason why every city, town and village should not be wholly or in great part at any rate, self-supporting from an egg standpoint. There are hundreds and thousands of dolars' worth of good feed thrown in the garbage pails every day. The waste going on even yet in our cities is simply appaling. The kitchen waste from the ordinary family of five or six people may be fed to best advantage to a flock of about twenty-five birds. This is more than many will want to keep, but a flock of this size will only require a house about twelve feet square—even a little less will do—no yard room is necessary and the eggs produced should keep the house supplied and still leave enough to sell to less thrifty neighbors, to pay for all the supplementary feeds which it is necessary to rpuchase.

What is more tempting to the appetite than an absolutely new laid egg from a flock that has been cleanly fed? Once used to home produced eggs, the consumer will never be content to depend on store eggs. If you don't believe this, try it.

Under present conditions, increased production should not be brought about by increasing the number of poultry farms, but rather by increasing the size and number of farm flocks culling closely, and keeping nothing but good producers and last but of primary importance—by the increase in number of back-yard poultry plants where flocks may be kept largely on feed that would otherwise be wasted.

POULTRY FEEDING

(Experimental Farms Note)

The problem of economical production, with feed at the present prices, is a question that has been worrying producers during the past few months. The question of what to feed is one that requires more careful consideration than ever before. Feed is high, hterefore the ock should be culled closely and nothing but the most vigorous birds retained. They should not only be fed heavily, but should be fed such feeds as llwi give results. For this purpose it is necessary to supply cereal, animal, vegetable and mineral feeds.

Cereal or grain feeds should form the principal part of the ration and for best results a certain proportion shrould be ground. The question is what are the best and most economical feeds to use. During ordinary times, a mixture of corn, wheat and oats is popular, but under present conditions milling wheat should be conserved for human food and only the lower grades used for stock feed. Lower grade wheat, oats and corn, buckwheat and barley these are all feeds that may be used to advantage. The extent to which each is used will depend on prices.

For ground feed, "Buckwheat screenings may be used to advantage, also mixtures containing bran, cornmeal, ground oats or other similar grains.

Vegetable or green feed is absolutely necessary to keep the flock in thrifty condition. It not only supplies succulence, but grain feed as well. Mangels turnips, cabbage, small potatoes or other similar waste products may be used to advantage.

Animal or meat feed is a form of food that poultry keepers frequently neglect supplying. It is not possible for a hen to produce eggs profitably on an all-grain ration. Sour milk is usually available on farms and no animal feed will give better results, as it not only supplies the necessary feed, but it also keeps the birds in good tone. If milk is not available, beef scrap, blood flour, green cut bone or similar feeds must be supplied to take the place of the grubs and insects which the birds get on range.

Mineral feed. Lime for the egg shells and mineral salts for the growth of bone must be supplied. Small quantities may be obtained from such feeds as clovers, but it is necessary to feed oyster shells or something similar to supply lime in sufficient quantities for a heavy egg production.

Sample Ration

Morning — A light feed of mixed grains scattered in a deep litter.

Noon—Green feed, mangels, vegetable parings or sprouetd oats.

Night—Full feed of scratch grains.

The scratch grains should be a mixture such as lower grade wheat, oats and corn,—barley, oats and corn,—barley, oats and buckwheat,—or whatever grains are cheapest at the time. So far this season, oats have been the cheapest grain food, so it is advisable to use them to as great an extent as possible.

The present indications are that corn will be greatly reduced in price. When this happens is should be used extensively, as, supplemented with a high protein feed such as sour milk or beef scrap, it is one of the most valuable of feeds.

Besides the foregoing, a hopper of dry mash, such as ground buckwheat screenings three parts, blood our or beef scrap one part, is kept constantly before the flock, also hoppers or oyster shell and beef scrap. If sour milk is available the beef scrap may be omitted or green cut bone may be supplied in the place of either. A good time to supply this is at the noon feed when a mash made from the kitchen scraps in which is mixed the green cut bone, at the rate of about one half ounce per bird and dried off with the meal mixture, may be fed.

Because feed is high in price, don't stint the flock. It takes a certain amount of feed merely for maintenance. It is only the feed over and above this amount that can be used for production, therefore feed and water liberally.

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It is used by over half a million breeders — in the largest ranches and in the piano-box outfit of the beginner—and every user is enthusiastic. All the Agricultural Colleges and Experiment Stations endorse it. Success always accompanies it.
Our guarantee is simple, but look! Put a Buckeye in the same room with any other incubator. If it doesn't hatch more chicks and stronger chicks than any other, regardless of price—the first time you use it—we will take it back.
There's real reason for Buckeye superiority. We've put it into a striking new catalog, with a wonderful array of proof. Get that catalog! It means success with poultry! Write for it today.
Makes three chicks grow where one grew before, and removes the gamble from chicken raising.
Its use has ended the awful mortality of chicks, reduced operating costs for any number from 100 to 1000 to less than six cents a day; reduced labor to a fourth and hastened chicks to profitable maturity in less time than ever.
It's the most practical brooding device ever invented, simple, safe, sure, sanitary. Burns soft or hard coal, keeps fire 24 hours at one coaling, requires little attention. Write your own guarantee—we will sign it.
Our catalog will absolutely convince you of its wonderful results, told over their own signatures by delighted patrons, who have learned that there is such a thing as certainty in chicken raising, and who know that it is found in Buckeye quality and Buckeye service. Get that catalog today!
The Buckeye Incubator Company
121 Euclid Avenue Springfield, Ohio
Pacific Coast Branch: Box 121 Oakland, California

At the Poutry Show recently held in Fredericton H. M. McMonagle, whose ad. appears in the Maritime Farmer, had the following winnings:

Barred Plymouth Rocks 1st, 2nd and 3rd hens; 1st pullet; 1st pullet mating pen. S. C. Brown Leghorns 1st cock; 1st hen; 1st cockerel; 1st pullet. 1st White Wyandotte cock. 4th S. C. White-Leghorn cockerel. S. C. Rhode Island Reds 3rd cock; 2nd pen. R. C. Rhode Island Reds 1st cockerel; 1st pullet. White Crested Black Polish 1st cockerel; 1st hen.

CORRUGATED
WRITE FOR PRICES
METALLIC ROOFING Co
LIMITED.
TORONTO, CANADA.
IRON

PRIZE WINNERS YORK-SUNBURY POULTRY SHOW, JANUARY 1918

Special Prizes

Best pen of Birds at show—Lloyd Johnston, North Devon—(Silver Cup).

Best female bird in open competition—Percy Morgan, North Devon.

Best male bird—J. N. Ferguson, Fredericton.—(This scored highest mark of anything on exhibition).

Barred Plymouth Rocks—Cock, 1, B. Goodspeed, Penniac; 2, Roy Kitchen, Fredericton.

Hen—1, 2 and 3, H. M. McMonagle, Fredericton.

Cockerel—1, Geo. Lockhart, Fredericton; 2, B. Goodspeed; 3 and 4, C. R. Willis, Nashwaaksis.

Pullet—1, H. M. McMonagle; 2 and 4, Chas. R. Willis; 3, J. E. Page, Fredericton.

Utility Pair—1, 2 and 3, Roy Kitchen.

Pullet, Mating Pen—H. M. McMonagle; 2, Roy Kitchen.

White Plymouth Rocks—Cock, 1, Walter S. Bailey, Fredericton; 2, Henry Simmons, Fredericton.

Hen—1, W. S. Bailey; 2 and 3, H. Simmons.

Cockerel—1, 2, 3, and 4, W. S. Bailey.

Pullet—1, 2, 3, 4, 5, and 6, W. S. Bailey.

Pen—1, W. S. Bailey.

Partridge Plymouth Rocks—Cock, 1 and 2, Henry Simmons.

Hen—1, 2 and 3—Henry Simmons.

Cock—2, Henry Simmons.

Pullet—1 and 3, Henry Simmons; 2, Geo. Lockhart.

White Wyandottes—Cock, 1, H. M. McMonagle; 2, Percy L. Morgan, Devon; 3, Jas. W. Stickles, Devon.

Hen—1, 2, 3 and 4, Percy L. Morgan.

Cockerel—1 and 5, Lloyd B. Johnston, Nashwaaksis; 2 and 4, Geo. W. Brown, Fredericton.

Pullet—1 and 6, Geo. W. Brown; 2, 3 and 5, Percy L. Morgan; 4, Lloyd B. Johnson.

Pen—1, Lloyd B. Johnston; 2 and 3, Percy L. Morgan.

Buff Wyandottes—Cockerel, 1, W. S. Swetnam.

Pullet—1 and 2, W. S. Swetnam.

Silver Wyandottes—Cockerel, 1, John P. Bain, St. John.

Pullet—1, J. P. Bain.

Black Wyandottes—Pullet, 1, J. P. Bain.

Partridge Wyandottes—Cock, 1, J. Titus Barnes, Apohaqui.

Hen—1, C. J. Toner, Fredericton; 2, J. Titus Barnes.

Cockerel—1, J. Titus Barnes; 2, Robt. P. Allen, Fredericton; 3, Arthur Hoben, Fredericton.

Pullet—1, Robt. P. Allen; 2, J. Titus Barnest.

Pen—1, Robt. P. Allen; 2, J. Titus Barnes.

S. C. Rhode Island Reds—Cock, 1 and 2, W. S. Bailey; 3, H. M. McMonagle.

Hen—1 and 3, W. S. Bailey; 2, John P. Bain.

Cockerel—1, 2, 3, 4, 5 and 6, W. S. Bailey.

Pullet—1, 3, 4 and 6, W. S. Bailey; 2, John P. Bain; 5, Arthur Hoben.

Pen—1, W. S. Bailey; 2, H. M. McMonagle.

R. C. Rhode Island Reds—Cockerel, 1, H. M. McMonagle.

Pullet—1, H. M. McMonagle.

A. O. V. American Breeds—Cock, 1, John P. Bain.

Hen—1, John P. Bain.

Cockerel—1, John P. Bain.

Pullet—1, John P. Bain.

Buff Orpingtons—Cockerel, 1 and 2, J. N. Ferguson.

Pullet—1 and 2, J. N. Ferguson.

Black Orpingtons—Hen, 1 and 2, W. S. Swetnam.

Cockerel—1 and 2, W. S. Swetnam.

Pullet—1 and 2, W. S. Swetnam.

Dorkings—Cock, 1, Day Bros., Moncton.

Hen—1, John P. Bain; 2, Day Bros.

Cockerel—1, John P. Bain; 2, Day Bros.

Pullet—1, John P. Bain; 2, Day Bros.

Red Caps—Cock, 1, John P. Bain.

Hen—1, John P. Bain.

Dark Cornish—Cock, 1, John P. Bain.

Hen—1, John P. Bain.

Cockerel—1, John P. Bain.

Pullet—1, John P. Bain.

White Cornish—Hen, 1, John P. Bain.

Light Brahmas—Cock, 1 and 2, Day Bros.

Hen—1, Day Bros.; 2, Chas. Smyth, Moncton.

Cockerel—1 and 2, C. H. Smyth; 3, Day Bros.

Pullet—1, Day Bros.; 2, C. H. Smyth.

Pen—1, Day Bros.

Partridge Cochins—Cock, 1, Day Bros.

Hen—1, Day Bros.

Pullet—1 and 2, Day Bros.

Black Langshans—Cock, 1 and 2, C. H. Smyth.

Hen—1 and 2, C. H. Smyth.

Cockerel—1 and 2, C. H. Smyth.

Pullet—1 and 2, C. H. Smyth.

Pen—1, C. H. Smyth.

S. C. Brown Leghorns—Cock, 1, H. M. McMonagle; 2, Henry Simmons.

Hen—1, H. M. McMonagle; 2 and 3, Henry Simmons; 4, Geo. Lockhart.

Cockerel—1, H. M. McMonagle.

Pullet—1, H. M. McMonagle.

R. C. Brown Leghorns—Cock, 1, Henry Simmons.

Hen—1 and 2, Roy Kitchen.

Pullet—1, 2 and 3, Roy Kitchen.

Pullet Mating Pen—1, Roy Kitchen.

S. C. White Leghorns—Cock—1 and 3, J. N. Ferguson; 2, Lloyd B. Johnston.

Hen—1, 3 and 4, J. N. Ferguson; 2 and 5, Bird & Long; 6, Lloyd B. Johnston.

Cockerel—1, 3 and 5, J. N. Ferguson; 2, Lloyd B. Johnston; 4, H. M. McMonagle; 6, Bird & Long.

Pullet—1, Lloyd B. Johnston; 2, 4 and 6, J. N. Ferguson; 3 and 5, Bird & Long.

Pen—1 and 3, Lloyd B. Johnston; 2, J. N. Ferguson.

R. C. White Leghorns—Cock, 1, Day Bros.

Hen—1, Day Bros.

S. C. Buff Leghorns—Cock, 1, J. P. Bain; 2, Day Bros.

Hen—1, J. P. Bain; 2, Day Bros.

Cockerel—1, Day Bros.; 2, J. P. Bain.

Pulet—1, J. P. Bain; 2, Day Bros.

S. C. Black Leghorn—Cock, 1, J. B. Bain; 2, Day Bros.

Hen—1, J. P. Bain; 2, Day Bros.

Cockerel—1, Day Bros.; 2, J. P. Bain.

Pullet—1 and 2, Day Bros.

R. C. Black Minorcas—Cock, 1, J. P. Bain.

Cockerel—1 and 2, J. P. Bain.

Pullet—1 and 2, J. P. Bain.

W. F. Black Spanish—Cock, 1, J. P. Bain.

Hen—1, J. P. Bain.

Anconas—Cock, 1, Chas. H. Smyth.

Hen—1, Chas. H. Smyth.

Pullet—1 and 2, Chas. H. Smyth.

Houdans—Hen, 1 and 2, Day Bros.

Cockerel—1 and 2, Day Bros.

Pullet—1 and 2, Day Bros.

Spangled Hamburgs—Hen, 1, Geo. Lockhart.

Black Hamburgs—Cock, 1, J. P. Bain.

Hen—1, J. P. Bain.

Cockerel—1, J. P. Bain.

Pullet—1, J. P. Bain.

Golden Campines—Hen, 1, J. P. Bain.

Pullet—1, J. P. Bain.

White Crested Black Polish—Hen, 1, H. M. McMonagle; 2, Henry Simmons.

Cockerel—1, H. M. McMonagle.

Bronze Turkeys—Cock—1, J. Titus Barnes; 2, B. Goodspeed.

Hen—1, J. Titus Barnes; 2, B. Goodspeed.

Cockerel—1, J. Titus Barnes.

Pullet—1, J. Titus Barnes.

Toulouse Geese—Gander, 1, J. Titus Barnes; 2, B. Goodspeed.

Hen—1, J. Titus Barnes; 2, B. Goodspeed.

1917 Gander—1, Alonzo Staples.

1917 Goose—1, Alonzo Staples.

Emden Geese—Gander, 1, B. Goodspeed.

Goose—1, B. Goodspeed.

African Geese—Gander, 1, J. Titus Barnes.

Goose—1 and 2, J. Titus Barnes; 3, B. Goodspeed.

Indian Runner Ducks—Drake, 1, Alonzo Staples; 1917 Drake—1, Alonzo Staples.

A Big Egg Yield

ROYAL PURPLE POULTRY SPECIFIC

Royal Purple Poultry Specific is a great egg producer and poultry conditioner. It makes hens lay in the winter almost as well as they do in summer. This is because our Poultry Specific supplies the missing food elements that fowl need in their winter ration and without which they cannot lay. Royal Purple Poultry Specific tones up the digestive system, and keeps the fowl active and healthy. It should be fed daily in a hot or cold mash.

Royal Purple Poultry Specific

has pleased thousands of farmers and poultrymen. It has enabled them to get winter eggs without trouble. Read the views of the following users:

Fred E. Bond, Kincardine, Ont., writes:

"I have been feeding Royal Purple Poultry Specific to my hens this winter and I find it beats anything I have ever used as an egg producer. They started to lay right away and kept on gaining. I will never feed anything else as long as I can get it."

T. W. Hale, Toronto Annex, writes:

"I have fed your Specific to poultry, and it is a valuable tonic; increases the production of eggs. Would not be without it; keeps them in good health and I recommend it highly. Any person trying it once will not be without it."

If you want more eggs and healthier fowl, feed Royal Purple Poultry Specific. It is sold in large and small packages.

Ask our dealer in your town for it.

Made only by
W. A. Jenkins Mfg. Co., Limited
London, Canada

FREE BOOK
This 80-page book describes the common diseases of poultry and stock. It tells how to build and remodel poultry houses, etc., etc. Send for a copy.

46

POULTRY NOTES

"Utility" does not mean "mongrelism" any more than "thoroughbred" means "standard-bred."

Fowls are obliged to throw off much of the waste of the body through the lungs. They do not sweat in the sense that do other animals, but instead breathe several times faster than sweating animals when heated. To keep in good condition of health, a hen requires nearly seven times the amount of froesh air in proportion to its size as does a horse.

There is almost as much difference between different families or strains of each breed as between the different breeds; therefore, receive with some allowance the praise or condemnation of any breed.

MORE EGGS!!

Poultry Owners all through Canada are getting more eggs from their hens than they used to. A little International Poultry Food Tonic in their feed every day will bring you more eggs and you will be in line to profit more by the high prices.

International Poultry Food Tonic

is a highly medicated preparation containing certain roots, seeds, herbs and spices which are absolutely essential to poultry. These ingredients stimulate the dormant egg-producing organs and will increase greatly the number of eggs you receive. The results are immediate and permanent. Sold at all dealers in 25c, 50c, & $1.00 packages. Write to-day for a copy of International Poultry Guide—FREE.

INTERNATIONAL
Stock Food Co. Ltd.
Toronto : Canada

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

THE SOLDIER

(By Andrew Edwards.)

He needs no tinsel on his coat,
No medal, star or braid;
No outward sign of rank or worth
To keep him unafraid.

The soldier carries in his breast
A living accolade—
The dear medallion of her face,
The noblest medal made!

Her faith, her hope, her tenderness,
Her human fear and pain
Are like a glory on her soul
To comfort and sustain.

In honor and in pride he goes
To face his duty grim;
Transplanted to himself, he feels
The heart that beats for him!

HOUSEWORK AS A BEAUTIFIER

It has long been said that housework and beauty cannot go hand in hand but it remains for the woman of 1919 to prove that she can do all her own housework and be as dainty and pretty as her next door neighbor who keeps a hired girl. It is quite unnecessary to have red, rough, unsightly hands because you wash the dishes three times a day or do the family washing, and so it goes with all the other household duties; they can be done so you are notlessbutmorebeautiful.

The girl who knows how to do her housework in a sensible manner will be able to broaden her chest, improve her complexion, keep down the pounds of flesh that cause her to ache with fatigue, beautify her hands and arms and receive the chance visitor with a radiant smile.

I hope the busy housewife won't smile incredulously at this and read no further, because I may be able to give her a few practical hints on the humdrum home duties.

In the beginning, make up your mind that you like housework, that you love to do this for your mother or father or perhaps your husband, remembering how many things they have done for you. If you get into this frame of mind you will give an extra shine to the kettles and an extra pat and smooth to the bedspreads. It's all in looking at things as they are and when you come to think of it, making a home is a pretty big thing to do and there is every reason you should be proud of it. Don't forget that.

"But," you say, "what about red hands with blisters where you hit them on the hot pan or tired backs from ironing and washing?" Yes. I know and that is what I am coming to.

Suppose we take up dish-washing first because that is something that comes three times a day and can't be avoided. There is a right way and a wrong way of washing dishes. You musn't bend way over until your back looks like the half of a barrel hoop. If you do this, it explains why you have such an aching back all day long. Try standing erect when washing your dishes, and be sure not to stand with all the weight on one foot. That gives you foot ache. Stand levelly on both feet.

To avoid putting your hands in the dish-water, use mops for washing the dishes. These can be made by taking a short stick and tying a mop of soft cloth at one end. With this you can wash everything but the pots and kettles.

I suppose of course as soon as you are through cooking you fill these utensils with water, so they will not be hard to clean. If you do this, you can easily clean them with a long-handled stiff cleaning brush and just as quickly as if you were soaking your hands in the greasy, soapy water.

One of the most convenient things I know of is rubber gloves for dish washing, window cleaning, scrubbing, etc. They are not expensive and will last for a very long time if you are careful not to cut them. Think what a diffcrence it would make in your hands! They would be soft and white and you could go out to entertainments without being ashamed of them.

With your hands so carefully protected, you wouldn't mind splashing around in water and giving every dish a littlc extra attention. For my part I love to wash and dry dishes but, of course, I see that my hands are taken care of.

It is easy to burn one's hands on the hot stoves or dishes, but I've found that a substantial dish-cloth hanging handy to the stove and careful covering up of the hands when taking dishes out of the oven, or stirring things over a hot fire, will keep your hands free from ugly, disfiguring burns and blisters. The only times I have been burned was when I was careless and not paying attention to my work.

Remember when scrubbing the floor to use the rubber gloves. You can clean the floor just as well so keep your hands white and soft.

Nowadays the long handled self-wringing mope are much used and they keep the floors clean, if plenty of floor soap is used and think what a saving to your back and knees!

When you are paring vegetables of fruit and find you have stained your hands, you can remove these marks by rubbing on a little oxalic acid. Your druggist will tell you how to use it. A slice of lemon will do the same work and is much cheaper. So you see you need not have stained hands, unless you want them.

Perhaps you have thin arms. Let me tell you a secret. Window-washing will develop them better than anything I know of, making them round and shapely, so that the new, tight-fitting sleeve can be worn without fear. Think of that!

Washing clothes is not considered a very desirable occupation but if you use plenty of water, soap and a wringer, and remember to place the tubs high, so you won't need to bend over much you will find it doing you more good than harm, as in this way your skin gets its weekly steaming. When the clothes are all hung out on the lines to dry, run into the house, wash off the perspiration with soap and water, masage in a little cream, fluff on some powder and see if your skin doesn't feel and look better for its steaming over the tub. As your hands are all puckered up from being in the water so long, rub them while wet, with cider vinegar and they will become smooth quickly. As soon as this is done rub in a little sour cream, slip on a pair of gloves made of drilling an dhie you away to sprinkle the clothes and begin your ironing.

This is not hard and if you have the windows open so you can breathe fresh air, your board placed high so you need not bend your back, it is really nothing but a pleasure. I know because I've done it.

Every girl or woman wants to have a pretty bust and broad chest and instead of telling her to take this or that I am going to ask her to—sweep. Sweep as the girl in the picture is sweeping, with back held erect, broom held firmly in both hands and a smile on your lips. Why, you can do as much more for bust and chest by sweeping as your heart could desire, but not unless you stand up. Sweeping with bent back and bowed-in chest will spoil your figure and ruin your health. Health is beauty, girls dear.

The hair to be pretty and easily dresed must be kept from the dust and so I think it is a good idea to make a dust-cap of heavy cotton cloth (muslin isn't thick enough, Miss Vanity) and put it on after breakfast is over, the dishes washed and dried and you ready for dusting, sweeping and making beds. You will find your hair comes out just as soft and pretty, after a regular orgy of dust, as if you had been gathering flowers in the garden.

When dusting the high mouldings and big pictures, never use a long-handled brush but have a small firm step-ladder. Climbing steps is mighty good exercise for the thick waist and the girl who wishes to have the long waist so popular now, should try dusting the high places standing on a step-ladder.

If the busy house-wife intends to take a morning for polishing the silver or polishing the range, she should first rub on her hands a generous supply of muton tallow, also fillingup the spaces under and around the finger nails. In this way the grease prevents the grim from filling the pores of the skin and a little soap and water will cause the hands and nails to come out perfectly nice, instead of one's having to rub the skin off with a nail brush.

As most working clothes are not beautiful, why not make your working dresses out of some pretty light brown or blue or of black and white calico? Get cheap washable stuff and make the dresses with plaited skirt, walking length, the waist buttoning up the back with short sleeves, simple blouse and low turn-over collar or no colalr at all, just a low Dutch neck? Make the drcss all in one piece with sewn-on belt. When working covcr with big apron and if anybody comes in unexpectedly throw off the apron and therc you are as neat and pretty as you can be. This dress is suitable for afternoon and evening also.

BREAKFAST MENU

Bread Cereal
Quecn of Muffins
Prunes Coffee
Egg Toast
Barley Scones Coffee
Egg and Rice
Cornmeal Muffins
Bran Cookics Cereal Coffee

Bread Cereal—Put stale bread in oven until it is crisp and dry and a golden brown, crush with rolling pin. Serve with cream and sugar as a breakfast food.

Queen of Muffins—¼ c. butter, ½ c. milk 1-3 c. sugar, 1½ c. our, 1 egg, 2½ tsp. B. P. Cream butter, add sug-

MADE IN CANADA

Bread is the cheapest food known. Home bread baking reduces the high cost of living by lessening the amount of expensive meats required to supply the necessary nourishment to the body.

REFUSE SUBSTITUTES.

E.W.GILLETT COMPANY LIMITED
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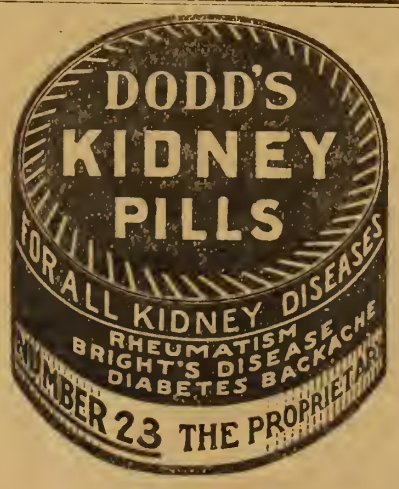


BUTTER ?

What are you paying for it ?
Save money by using MORE

CROWN BRAND CORN SYRUP

A wholesome spread for a slice of Bread — and children "love" it.

2, 5, 10, 20 lb. tins also 3 lb. "Perfect Seal" Glass Jars.

Write for free Cook Book.

THE CANADA STARCH CO. LIMITED, MONTREAL.
32

Daughter, SOUR STOMACH

Mother, FLOATING SPECKS BEFORE EYES

BOTH CURED BY

MILBURN'S LAXA-LIVER PILLS.

They stimulate the sluggish liver, clean the coated tongue, sweeten the breath, clean away all waste and poisonous matter from the system, and prevent as well as cure all sickness arising from a disordered condition of the stomach, liver and bowels.

Mrs. Joseph H. Therieau, Saulnerville, N.S., writes:—"I was troubled with a sour stomach, and took five vials of Milburn's Laxa-Liver Pills, and they cured me.

My mother also used them for floating specks before the eyes. They cured her also after having taken four vials. We both highly recommend them to all sufferers from liver troubles."

Milburn's Laxa-Liver Pills are 25c. per vial at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

ar, egg well beaten. Sift B. P. with our, add to first mixture, alternately with milk. Bake in muffin tins in quick oven.

Stewed Prunes—½ lb. prunes, ½ c. sugar, 3 c. cold water, 1 tbsp. lemon juice. Wash prunes in warm water and soak over night or several hours in cold water. Cook slowly until tender in the water in which they were soaked, add sugar and lemon juice and cook 5 min. This is a general method for all dried fruits.

Cereal Coffee—Two parts bran and one part middlings, mix with enough molasses to moisten. Bake in oven until crisp. Use as ordinary coffee.

French Toast—1 egg, 1 c. milk, ½ tsp. salt, 6 or 8 slices bread. Beat egg add salt and milk, dip the bread in the mixture. Have a frying pan hot and well buttered; brown bread on one side, place a small piece of butter on top of each slice, turn brown on other side. Serve hot with cinnamon and sugar if desired.

Barley Scones—Sift together 1 c. each of barley and wheat our, ¼ tsp. soda, 4tsp. B. P., ½ tsp. salt and 2 tbsp. shortening, then mix to a dough with 1 c. thick sour cream. Turn on our board, roll in a sheet ½ in. thick, cut into diamond shapes and place in buttered pan. Brush over with sweet mlik, dredge with sugar and bake in quick oven. Split the scones, spread one half with butter the other half with jam or marmalade and press the corresponding halves together. Serve hotwith tea, coffee or cocoa.

Egg and Rice—1 c. boiled rice, 1 tbsp. butter, slice of onion, ½ c. rich milk, 3 eggs, salt and pepper. Put butter and onion in pan and fry for a few minutes, add rice then egg beaten and milk added. Cook until egg is cooked. Serve hot.

Cornmeal Muffins—1 c. cornmeal, ½ tsp. salt, 1 egg, ¼ c. our, 2½ tbsp. sugar, ½ tsp. soda, 1 c. sour milk. Mix and sift dry ingredients, add milk and egg then melted butter. Bake in quick oven about 20 minutes.

Bran Drop Cakes—1 egg, ¼ c. butter, ½ c. brown sugar, ¼ c. milk ½ c. molases, 1½ c. white our, 2tsp. B. P., salt, 1¾ c. brna, 1 c. raisins, chopped, ¼ tsp. soda. Cream butter and sugar together add beaten egg, molasses, mixed and sifted dry ingredients, except bran, alternately with milk. Add raisins then bran. Drop from spoon and bake in hoderate oven.

PARENTS WHO DO NOT VISIT SCHOOL LOSE OPPORTUNITY

Every parent who has a child attending school should make it a point to visit their school at least once during the term, and several times if at all possible. Interest centres just now in the war, in farm problems, etc., but there is no problem—no question of more vital importance than the training of the children.

Parents are too often disposed to allow their boys and girls to attend school year in and year out without so much as calling to make enquiry concerning them, or to visit their schoolrooom to ascertain how their development is progressing. The children are no doubt in good hands, but schools progress as they should only when parents take an active interest in them.

There are certain laws to which the training of teachers must conform. There are credentials which every teacher must have. There are qualifications which he must possess, yet none of these things can take the place of a parent's actual co-operation with the teacher himself.

No parent means to be careless concerning this great matter, but many are. They tell themselves that they have no time to spend in the schoolroom, thereby placing dollars and cents above the welfare of their own flesh and blood.

As a matter of fact, most of the teachers are competent, and most of the schools are well equipped, but these do not take the place of one's own personal interest in either teacher or school. The teacher welcomes this interest. He can do better work where parents are taking active interest by an occasional visit to his school than where their rather bored indiffference makes his position that of a stranger. He knows that his reputation as a teacher depends largely upon the opinion which parents form of him and he would much rather they received their knowledge at first hand.

Furthermore, there are often questions that arise regarding expenditures, and the average parent is inclined to view all new departures as a waste of money and time. He should see the conditions under which his boys and girls work before forming a set opinion, and try to realize that time does move, thereby recognizing the need of a better and more efficient training that the future will undoubtedly make necessary. Competition is becoming greater and life more demanding in its requirements.

The children, too, will appreciate the fact that their parents are sufficiently interested in their work and environment to call upon them, and they will makes a greater effort to please both parents and teacher. It takes but a little time, and a parent will be warmly welcomed in the schoolroom, and his interest will be the means of that school's growth and development.

There are many, many ways to keep the children well, happy and interested in school work. The parents and teachers should more often plan and work together, and in most cases the child who shows a distaste for learning can be redeemed, if both parents and teachers are quick to see the need, grasp the opportunity, and take the initiative.

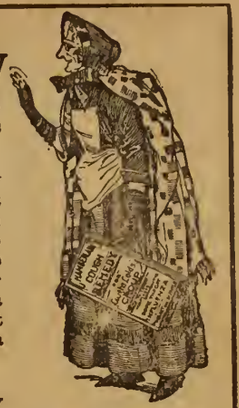
PROLONGING THE LIFE OF CLOTHING

In these times when there is a shortage not only of food materials, but also of textile stuffs, the woman who can clothe herself and her family at a minimum expense is "doing her bit" just as much as the woman whose garbage can fills slowly or the man who makes two potatoes grow where none grew before.

Many articles of clothing that in ordinary times would be discarded without a second thought may, with a little care, be freshened up and made to serve another period of usefulness.

Wooien goods may be satisfactorily cleansed by washing in warm water with soap solution or soap bark. Soap bark is prepared for use by letting five cents' worth stand in two quarts of water for an hour and then straining it into lukewarm water in which the material is to be washed. Water of the same temperature should be used

Good for the whole family



A good cough remedy is one that can be depended upon to cure coughs. Not one that cures some particular cough, but coughs in general.

While the causes of all coughs are primarily the same, yet the condition of the patient is what makes the difference in the nature of the cough itself. Coughs of healthy persons are easier to cure than the coughs of invalids. The more powerful convulsive cough of a big man is harder to cure than the cough of a baby. If you get a remedy that will cure a big man's cough and yet not be too powerful for the baby, you have a good cough remedy.

Chamberlain's Cough Remedy

"Granny" Chamberlain

is just this kind of remedy. It is good for any member of the family. It relieves coughs of all kinds. It is composed of things which cure easily and soothingly without harming the delicate tissues of the throat, and is the ideal remedy for coughs, colds, croup, influenza and whooping cough.

Yours for Health —Granny Chamberlain.

31

BUSINESS MEN

Are just as anxious to discover and employ well trained and talented help as young people are to secure good positions.

No better time for beginning preparation than just now.

Catalogues containing Tuition Rates and full information mailed to any address.

The Business College — S. KERR, Principal

You Can be Successful.

But Will You ?

No one can decide that but yourself. It takes preparation. Get started NOW. Control your chaces and do not let chances control you.

Moncton Business College

Moncton, N. B.

It pays to attend an Accredited School.

FIRST AID IN THE KITCHEN
Mends Leaks in Graniteware, Tin, Aluminum, etc., in two minutes without tools. Saves a kettle for half a cent. At dealers or from us, 15 cents.
Vol-Peek Co., Box 2024, Montreal, Can.
VOL-PEEK

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight aud dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

MRS. M. SUMMERS, Box 309

Read My FREE Offer:

To Mothers of Daughters, I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten day trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

Windsor, Ontario

St. Andrew's College Toronto

A CANADIAN SCHOOL FOR BOYS

UPPER AND LOWER SCHOOLS

CAREFUL OVERSIGHT THOROUGH INSTRUCTION

LARGE PLAYING FIELDS EXCELLENT SITUATION

REV. D. BRUCE MACDONALD, M.A., LL.D.

HEADMASTER

CALENDAR SENT ON APPLICATION

for both washing and rinsing. Press woolens when almost dry, on the wrong side, with a warm iron.

Most grease spots may be removed with naptha soap and warm water. Chemical or dry cleaning will remove grease spots by dissolving the fat. The cleansing liquid may be ether, chloroform, carbon tetrachloride, gasoline, naptha, or benzine. The last three should be used in the open air if possible. They must be used away from a fire or a flame of any kind.

On silks or satins, rub the grease spot with a thin paste made of benzine and carbonate of magnesia. The benzine evaporates and the magnesia will absorb the grease and can be brushed ffo. Very often dry French chalk or powdered magnesia alone will absorb the grease, several applications sometimes being necessary. A warm iron and blotting paper will remove some grease spots.

ANTIDOTES FOR POISONS

The most common poisons used about the farm at this time of the year are those contained in the common insecticides and fungicides. Below are the commonly prescribed antidotes for such poisons:

FIRST: Send for a physician.

SECOND: Induce vomiting (except in cases where caustics have been swallowed) by tickling throat with finger, or drinking hot water or strong mustard and water. Soap suds is commonly effective as is also common salt. After vomiting give sweet oil (olive oil, cottonseed oil), and then,

THIRD: Aply the appropriate antidote, if the kind of poison is known, as follows:

Carbolic acid, creosote, lice killer, etc.

Give Epsom salt (magnesian sulphate), or Glauber's salt (sodium sulphate), one ounce to a pint of water; then induce vomiting if possible or use the stomach tube and give olive oil or milk. Use alcohol, then water, for external burns. Diluted alcohol may be used internally if the salts cannot be had.

Copper: in Paris green, copper sulphate, blue vitrol or bluestone, Bordeaux mixture): Treat same as in case of Arsenic.

Copperas: (ferrous sulphate, green vitrol): Strong tea, soapsuds.

Lead: (in lead arsenate, sugar of lead): Treat same as in case of Arsenic. Epsom salt is also effective.

The Doctor Did Not Do Her Lasting Good

SO MRS. JOS. ROGER USED DODD'S KIDNEY PILLS

Popular New Brunswick Teacher Tells What Splendid Results She Got From Dodd's Kidney Pills.

Elm Tree, Gloucester Co., N. B.—Feby. 4th (Special.)—"When the doctor I consulted failed to do me any lasting good I decided that my kidneys were the root of my troubles, and made up my mind to try Dodd's Kidney Pills.

"You may judge of the results when I tell you that I have not lost a day's work as teacher during the past year."

That is the statement of Mrs. Jos. Roger, the well-known and popular teacher here. Just how ill she was before using Dodd's Kidney Pills is best told in her own words.

"My trouble came from a strain," she says, "and I suffered for thirteen months.

"Backache, heart flutterings, sciatica, neuralgia, nervousness, dizziness, and failing memory were among my symptoms.

"I took 12 boxes of Dodd's Kidney Pills in all, and I can say for them that they have done me all that was claimed for them."

If you have any of the symptoms that troubled Mrs. Roger, ask your neighbors if Dodd's Pills are not the remedy you are looking for.

NOVA SCOTIA FARMER'S ASSOCIATION

(Continued from page 251)

repairs which will prevent the larger amount of unnecessary work that must be done when these are not attended to. This Association also suggests that employees working at Highway Labor shall receive their wages in weekly payments.

Moved by Walter Churchill; seconded by Wm. O'Brien.

* * *

Whereas the Government is urging our farmers to increase production of beef and pork, and,

Whereas the farmers are willing and anxious to produce all of these products possible, and,

Whereas the feeds required to grow and fatten those products is scarce and difficult to obtain,

Resolved that the N. S. F .A. in Annual Session assembled ask the Federal Government to give cars of feed coming into our province precedence over all freight excepting munitions and other war materials, thereby giving us a more steady supply of feeds.

Moved by F. W. Foster;seconded by Wallace Rhodenizer.

* * *

Whereas in different parts of the province farmers are rapidly becoming organized into co-operative companies for the mutual benefit of its members, and,

Whereas their interests are identical with those of the Provincial Farmers' Association we feel that it is only just that they should have representatives in this body and would recommend that we express our willingness to accept representatives from theirs on the basis of one representative from each co-operative association of one hundred members or less and in no case more than two representatives from any one such organization.

On Thursday afternoon Prof. M. Cumming gave a practical talk on the seed and fertilizer situation and strongly urged the necessity of procuring supplies without delay.

A short discussion lead by Walter Churchill on "The Road Law and Good Roads" followed by votes of thanks to the retiring president for the manner in which he had looked after the affairs of the Association during the year and to the Municipal Council for the use of the Court House where the meetings were held.

Extracts from some of the addresses will be published in the columns of the Maritime Farmer.

FERTILIZERS FOR 1919

It is well that the New Brunswick Agricultural Societies take stock of the requirements of their members for fertilizers for 1919. It is not too early to begin. The fertilizer situation has been a source of speculation for some time past. The indications are that there will not be any great improvement in the supply during the coming twelve months. Therefore, every agricultural society should prepare to meet the situation.

It is a matter of regret too, that the excellent work done by the New Brunswick Agricultural Societies United has not won more hearty support. It is estimated that 40,000 tons of fertilizers are used in New Brunswick each year. Of this amount not more than one sixteenth has been furnished by the Agricultural Societies United. This means that hundreds of farmers are paying more for fertilizers than they need. By co-operation and having their society handle the bulk order they can save dollars for every ton they buy in that way. If you are a member of an Agricultural Society and the organization is not taking an active interest in supplying fertilizers co-opertaively, see that it gets busy and becomes an active participant in the movement. Every Agricultural Society in New Brunswick sould be a member of the New Brunswick Agricultural Societies United. The membership, as fixed by law, is five dollars but the advantages are many times that amount when measured in cold cash savings to farmesr. Societies requiring information should write the Secretary, James D. McKenna, Sussex. New Brunswick.

The time-saving secret of Gold Dust

What makes dirt stick and stick and stick? Grease! What dissolves the grease and saves household time? Gold Dust!

Proof? Test Gold Dust on some greasy dishes. See if you don't actually save time.

But Gold Dust saves more than just dish-washing time. In fact, thousands of women save time all through the day by following this rule: "Use Gold Dust for all dirt you can't brush up or sweep off." Such as—stains on woodwork, grease spots on kitchen floor, grease or oil on clothes,

But remember: For Gold Dust results be sure it is Gold Dust you really get. For sale everywhere in large and small packages.

GOLD DUST

The Busy Cleaner

Made in Canada

THE N.K. FAIRBANK COMPANY
LIMITED, MONTREAL

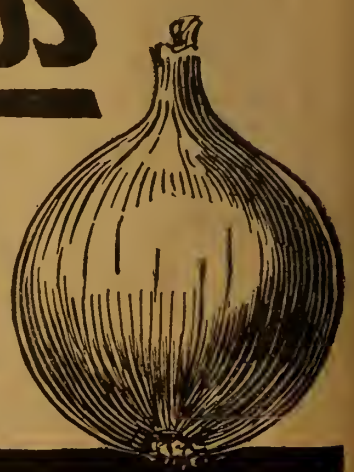
EWING'S SEEDS

will grow this year, just as they have grown for the past 45 years.

Ewing's Seeds bring success to the amateur gardener, and excellent profits to those who make their livings from their crops.

Write for our illustrated Catalogue — and if your dealer hasn't Ewing's Seeds, order from us direct.

EWING'S RELIABLE SEEDS MONTREAL



THE WILLIAM EWING CO. Limited
Seed Merchants
McGill Street, Montreal. 58

CONSERVATION OF BARN YARD FERTILIZER

(Continued from page 254)

that we specially recommend, for by this means the value of the resulting manure is enhanced without any hindrance to the exercise of the other useful functions of this amendment subsequently in the soil."

"An application of Gypsum is valuable to lands affected by 'black alkali.' The sodium carbonate which such soils contain not only asts directly as a corrosive chemical, cutting into and eating away the plant tissues (especially at the immediate surface of the soil) but it acts most injuriously on the physical condition of the soil, puddling it and making it impervious and causing it on drying to form hard, refractory masses. The application of land plaster converts the carbonate of soda into sulphate of soda, a milder form of alkali as regards vegetable life and one less prejudicial to the physical condition of the soil."—H. P. Timmerman.

APPLE SPRAYING

(Continued from page 250)

The Spray Gun

I cannot finish without a reference to the spray gun. It is the most valuable labour saving device that I have yet seen for the application of spray. In my own orchard I know that one man and a boy could put on 75 per cent. more spray and do a better job with the spray gun than two men and a boy could with the old bamboo rods. After the first spray particularly, when applying the lime and sulphur with the gun, do not stand close to the tree and spray up but get a long way off, preferably on top of the tank and spray down so as not to get the lime sulphur on the under side of the leaves.

In closing I must remind you that every winter for the past three years things have looked gloomy for the apples and every year our pessimists have amused themselves painting word pictures of blue ruin for the apple. Every year you have, on the whole, taken a chance and sprayed your trees and every year you have been rewarded with prices far in excess of what you expected. You know the position that Nova Scotia will occupy in the apple industry if, when the war is finished, our apple orchards are in good condition. I think that is all that it is necessary to say.

SOME PHASES OF THE AGRICULTURAL WORK FOR 1918 IN N.B.

The Greater Production Campaign must be given careful atention until every farmer is canvassed and seed is supplied to all requiring it, but the other activities that belong to a Department cannot be neglected except at a loss to the country which ultimately would mean a decrease in the general production throughout the province. Some agricultural work will be undertaken that is some what new in the province and other activities will only be speeded up.

Co-operative Marketing of Wool

Wool in the past was sold for whatever it would bring upon the local markets. No attention was given to the marketing because very few understood the requirements of the woolen manufacturers. Investigation revealed that under a proper system of grading the wool could be made worth more to the manufacturer and at the same time a great deal of educational work would be done and more dollars placed in the pockets of the farmers. The producer and consumer could be brought to gether. Under this system the producer receives the face value of his wool according to quality. Good returns can be had by caring for the sheep properly, by adequate feeding and housing and giving thought to the breeding. Every sheep owner will be given the opportunity to put his wool through a grading station next summer. About 200 meetings will be held throughout the province where this problem and the sheep industry will be discussed. Agricultural Societies will receive particular attention and where none exists and the farmers are willing, small organizations will be formed through which the Department may work. The grading stations will be at Fredericton and Moncton.

What Will It Do For Me?

YOU have heard of the great good this food cure is accomplishing for others. You have come to realize that nervous diseases do not right themselves, and therefore feel the necessity of some treatment to help you back to health and strength.

Now comes the all-important question as to what Dr. Chase's Nerve Food will do for you.

Basing our answer on a knowledge of the restorative value of the ingredients contained in this food cure, and on the experience of those who have proven its curative powers under the most trying conditions, we want to tell you that—

It will make your blood rich and red.

It will nourish the starved nerve cells back to health and vigor.

Mrs. C. French, 104 Lansdowne street, Peterboro', Ont., writes: "I was troubled with nervousness, sleeplessness, frequent headaches and indigestion. For many years I was troubled with a twitching or fidgety feeling about my limbs after retiring, causing me much loss of sleep. If wakened out of my first sleep, even had I been asleep only five minutes, I would lie awake for hours and could not get to sleep again. Any sudden noise or a door slamming would set my nerves going, and I would fear that something dreadful was going to happen. I had tried different remedies for this trouble, but without success. A friend asked me one day why I didn't try Dr. Chase's Nerve Food, so I thought I could at least give it a trial. I secured some and commenced using them, and found they benefited me so much that I have taken fully a dozen boxes. My nervousness or fidgety feeling in the limbs is entirely cured. I can now eat and sleep well. I can recommend Dr. Chase's Nerve Food strongly, and would advise anyone suffering from nervous trouble of any kind to use them according to directions."

It will cure nervous headaches by removing the cause.

It will strengthen the action of the heart.

It will correct the weakness and inactivity of the digestive organs.

It will restore energy, ambition and confidence.

It will prevent the development of nervous prostration, paralysis and locomotor ataxia.

Why not put Dr. Chase's Nerve Food to the test? We know that the formula is right. We have proven to you by thousands of reports from cured ones that this treatment positively effects cure, even in the most complicated cases.

We cannot do more. It remains for you to make the test. You have everything to gain by using this building-up treatment, for it cannot fail to be of at least some benefit to you.

Dr. Chase's Nerve Food

50 cents a box, a full treatment of 6 boxes for $2.75, at all dealers, or Edmanson, Bates & Co., Limited, Toronto. Do not be talked into accepting a substitute. Imitations only disappoint.

[illegible] paper, twine and shipping tags [illegible] by the Department [illegible] eived at the [illegible] and a receipt [illegible] shipper together with a [illegible] t least 75% of the full value of the wool. The wool in the grading stations will be insured. The Dominion Department of Agriculture will supply a competent grader. The wool will then be offered for sale and immediately the returns are in, every farmer will receive the final payment on the wool together with a statement showing how the wool graded.

An effort will be made to prevent the sale of lambs until they are ready for the market. The system of selling lambs at an early date is detrimental to the industry financially, and has no educational features to recommend it. Every man should endeavor to place a finished product of high quality upon the market and the system of early selling which is in vogue in some parts of the province does not induce the production of such animals.

Perhaps no other endeavors will do as much to arouse keen interest in the raising of sheep as the two above mentioned activities and it is acknowledged by all that this province should carry far larger numbers of sheep of much higher quality.

Pure Bred Sires

The scrub sire is one of the greatest drawbacks to New Brunswick's livestock industry. They cause deterioration in the livestock, low quality unthrifty animals, poor prices, engenders lack of interest and gives no encouragement to any man to concentrate attention and care and too often leads to dissatisfaction and a miserable slip shod system of animal industry. There would be many thousand more farmers in the province today if the scrub sires had been replaced years ago by pure breds. A lively interest in stock cannot be maintained except there is excellence in the animals.

Who is there that can be proud of a non-de-script stallion, that cannot claim type, beauty, quality strength, masculinity or many of the other outstanding points earnestly sought for by our foremost breeders? Who can be proud of a little scrubby bull picking its living upon the highways of the province, not of sufficient importance or of value to warrant ordinary care? How large is the loss to our farmers every year by breeding to sires because the fee is small? Why have other sections outstripped us in the production of sheep, cattle and horses? Why are we forced to go to other provinces for our supplies of pure bred breeding stock? The scrub sire must bear the blame. Not only has the scrub sire replaced the pure-bred but he has lowered the standards of the pure breds in the province because the market for good animals has been depressed.

However, New Brunswick is not the only sinner in this regard—every province has its share, but we have too large a share. Until the pendulum swings the other way every effort will be put forth by the Department to eliminate the scrub sire and replace him with a pure bred.

The importance of pure bred stock will be encouraged, more especially sheep and dairy cattle. Last fall about 1200 breeding sheep were handled and if reports are criteria, far more will be necessary for 1918. Enquiries for dairy cows are coming in and the importation in our lots is anticipated.

Moncton Co-operative Creamery

The farmers in Albert, Westmorland and Kent Counties have decided at the suggestion of the Department of Agriculture, to manufacture butter in a co-operative manner at Moncton. Stock has been subscribed, organization affected, a site secured, supplies ordered, manager engaged and a general scheme for operation has been outlined. Much work has to be done in the organization for cream shipping and in the instruction necessary for the care of cream. The educational efforts will be undertaken by the Department insofar as required.

Stallion Enrollment

Last season an effort was made but it was taken up at too late a date to have the desired effect. Every stallion that is to be travelled will be inspected before the season opens and any stallion owner travelling an uninspected stallion will have to be prepared for the cnosequences. Here again the scrub sire is to be given his proper rating and ultimately his place will be taken by a pure bred. It may take a few years to accomplish the movement. Definite inspection points and dates will be named.

Pruning Campaign

The great scarcity of labor is accountable for many orchards failing to bear a large crop and to overcome this an arrangement has been thrown open to the orchardists and as a result many orchards are now pruned. The Horticultural Division sends out competent pruners who are paid a flat rate by the farmers for the actual hours worked and they also have to duplicate the amount of time put in by the Departmental men. They also agree to spray and take proper care of the orchards throughout the summer.

Strawberries

A partial survey has been made and will be completed next spring. An effort to avert the gluts will be made. This is a very difficult undertaking because the date of ripening in the province is compared to other influences very largely the opportunity to export. However the effort will be made.

Bees

No one can estimate the loss this province has borne because the bee industry is not flourishing. Tons of honey was wasted due to dearth of collectors. Honey is an excellent food and could well be used in all houses every day. A campaign was commenced last summer and will be energetically followed up. There are about 300 bee-keepers that have been located. Every man will be visited. Many fruit growers are requesting assistance; where bees are kept invariably the crops of fruit have been better. The possibilities of this industry are almost beyond comprehension.

Boys' and Girls' Clubs

Club work will be encouraged. On January 2nd the staff of the Department met and plans for all the work were discussed and arranged. In every county there will be one or two boys pig clubs. These will consist of ten members each and every member will be given a pure bred sow pig under regulations which he agrees to fulfill. Careful records will be made. In every county within a couple of years there will be at least ten breeders of purebred pedigreed pigs who will be distributing breeding stock to their neighbors. These clubs are financed by public spirited men in every county.

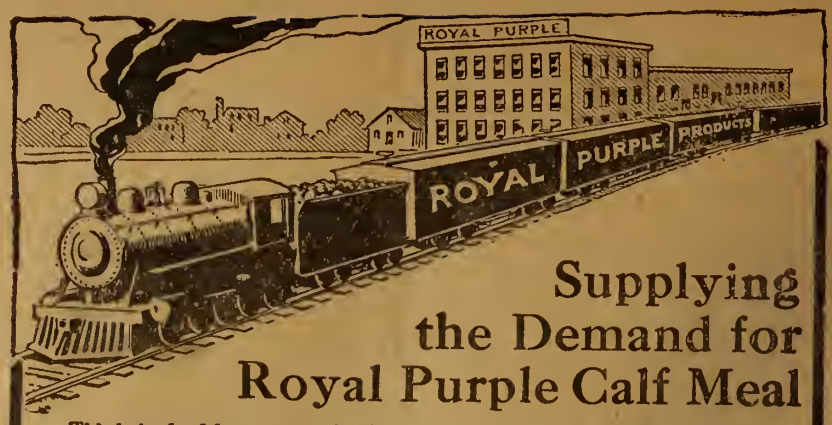
The Poultry industry will be attacked in a similar manner. Boys and Girls will be formed into clubs and 50 eggs given to every member under regulation. The eggs will be carefully selected in order that through the boys and girls a foundation for utility poultry may be properly laid. Every chick will be identified and all records will be kept at the Department of Agriculture, in addition to the forms until a sufficient number are had, which are sonsidered superior utility birds to form the foundation of an organized industry. The fattening of poultry will also be encouraged by the clubs.

It is intended that the young people be encouraged to raise good stock and more of it an dalso that the marketing be done in the proper way. In no case will pigs or eggs be given without something in return from the club members.

School Fairs

School Fairs have been held in a few places but next fall it is intended that a few more be held and that this and the club movement be brought together at the School Fall Fair. It is quite within reason to anticipate a fair when there would be 500 chickens.

Every bird or animal exhibited at the School Fair which has the necessary quality, type and substance will



Supplying the Demand for Royal Purple Calf Meal

This baby food for young animals is partially pre-digested, and can be fed to the youngest animals with perfect safety. It WILL NOT cause stomach or bowel trouble, which are serious ailments in young animals. Royal Purple is a sure preventive for scouring.

Calves Gain Rapidly Without Milk

When the calves are 3 or 4 days old they can be fed Royal Purple Calf Meal and raised just as well without one drop of milk. What prominent breeders remark:

Mr. Geo. W. Collins, Plainfield Ont., writes:

"Gentlemen,—In regard to your Calf Meal, I think you have the best on the market, as people who have bought it give it great praise. Some have taken their calves off sweet milk, and feed them nothing but your Calf Meal and water, and say they are doing as well on it as they did on the whole milk."

To Whom It May Concern: Uxbridge, Aug. 5th

This is to certify that I have secured your Royal Purple" Calf Meal from our druggist. Mr. T. C. Nicholls, of Uxbridge, and can speak of this meal in the highest terms. I have used other calf meals, but this one is the best I ever tried. I never saw a calf gain more rapidly and thrive better than mine did while using your "Royal Purple" Calf Meal. I can cheerfully recommend it to all our stockmen who wish to raise large, healthy calves."—Stanley W. Croxall.

Note—The above Mr. Croxall keeps a large herd of pure-bred Holstein cattle, and is an excellent authority on Calf Foods.

Royal Purple Calf Meal is equally good for young colts, lambs and young pigs. Put up in 25-lb., 50-lb. and 100-lb. bags. Secure it from our dealer in your town.

W. A. Jenkins Mfg. Co., Ltd., London, Can.

35

FREE BOOK

Send for our 80-page book which describes the common diseases of stock and poultry; also methods of feeding and our many products. Get a copy to-day.

Seed Grain--1918

Good Seed is scarce—Place your order now with your County Councillor.

The Department of Agriculture has ordered wheat and oats through the Seed Branch, Ottawa. The germination is carefully tested.

The seed is now stored in the elevators at Quebec, thus avoiding transportation difficulties and guaranteeing delivery.

The Department requested the co-operation of the County Councils in this distribution. Seed will be forwarded at their order in car lots, thus avoiding local freights and much handling.

Wheat will cost about $3.00 per bushel in bags laid down.

The Seed Branch is yet unable to fix the price on oats. Definite prices will be stated in this space immediately they are at hand.

New Brunswick is expected to bread herself for the duration of the war. Every farmer should grow some wheat.

Agricultural Societies should arrange orders early.

Send all orders to the County Councillors immediately.

New Brunswick Dept. of Agriculture

Better Crops Result from Spraying

This Knapsack is ideal for spraying small plots of potatoes, shrubs and all small fruits. It is strongly made, powerful and easily operated. We make the SPRAMOTOR in a size and style for every need—operated by hand, horse or gasoline power. Prices range from $7 up to $400.

Made in Canada—No duty to pay

Send to-day for our Free book on Crop Diseases and Spramotor Styles.

THE LONDON SPRAMOTOR, 5031 King St. East, London, Canada

be exhibited at poultry or fall fairs by the boy or girl under supervision of the Department of Agriculture.

These co-operative efforts will be made demonstrations of what can be done and nothing will be left undone to have the impressions indelibly stamped upon those who attend. The boy and girl must be given attention and agriculture will undoubtedly fare well under their direction.

There are several other phases of the work which will be carried on but cannot be touched upon here.

DRAINAGE OF FARM LANDS

In view of the importance of increasing the productivity of the land and the food resources of the Dominion, and the difficulty of so doing in face of shortage of labor, seed and fertilizer, little seems to have been published as to the effect of drainage, upon which all authorities are agreed, and the cost of which is represented by an interest charge far below the value of the result actually achieved. Further, these benefits do not, as in the case of increased area of cultivation involve additional expenditure for seed or fertilizer of even of labor beyond the first installation.

Drainage of farm lands in the East is of even greater importance than irrigation in the West. As has been set forth in Agricultural records, drainage does four things:—First, it removes in a wet season the surplus water and makes it possible to cultivate the land and get in the seed about three weeks earlier than on the same land when undrained. Secondly, it makes the land from 10 to 15 degrees warmer than if not drained, and this warmth promotes germination and early ripening of both grain and vegetables, also it tends to avoid rot amongst potatoes and root crops. Thirdly, it lets plenty of air down to the roots of the plants, which is necessary for satisfactory growth. Fourtbly, it makes the soil more porous and this in turn causes the soil to absorb and retain moisture for the use of the crops in time of draught instead of becoming so baked and hard as to lose the same by evaporation or surface flow. Frequently the increase of crop in one or two years pays the whole cost of the drainage, and seldom takes longer than four years, so that drainage easily returns 35% to 50% per annum on the money invested.

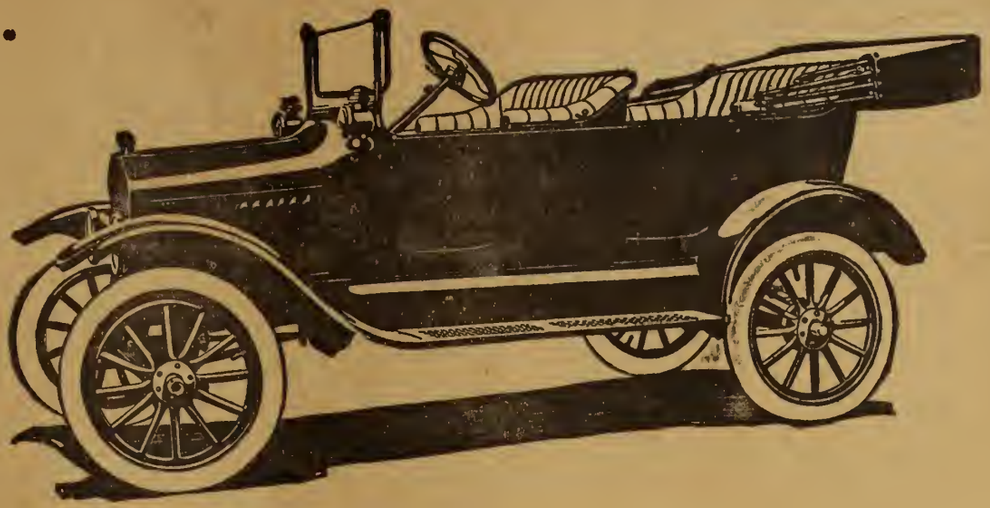
Better cultivation, seed selection and all the other steps in this direction as taught by our Agricultural institutions are based upon this the first one of soil improvement, and are of little avail without it, and soil improvement is intimately related to proper drainage.

Fortunately so far as Eastern Canada is concerned it has been demonstrated that field tile may be made from almost any kind of clay that does not crack too badly in drying and which is free from pebbles. Limestone particles are reduced to lime oxide in burning, these afterward absorb moisture swell and crumble the tile. Also, it is shown that a superior tile is produced from shale used in the manufacture of building brick and a mixture of clay and shale as well as sand is recommended according to texture, the object being to produce a plastic material that will flow smoothly through the die and in which the green pipe may be handled easily without damage and in which the drying qualities are good and shrinkage not too high. A strong cheap pipe likewise may be obtained from cement and sand and as porosity is not essential water entering into the pipe line at its frequent open joints, this or a glazed tile is equally serviceable to the porus surface clay tile. Most all hard tile will stand transportation and handling fairly well.

Supplying drain tile to such localities as have heretofore done little, if anf drainage work, is a matter more of arrangement of distribution than one of the cost of the commodity itself, providing, of course carload shipments are handled. But seldom, if ever, does any farmer require so much as a carload at a time and the absence of a reasonably accessible supply of drain tile means that the business is non-existent. Under these conditions every produce warehouse or freifht shed where farm goods are received from teams should be provided with a quantity of drain tile to be worked off in small quantities as return loading to the farm and on account as between the warehouseman and the farmer.

Every honest device should be employed to push the sale and use of farm tile, that an improvement which is only in its inception may have rapid growth permanently, benefitting both the producer and the consumer of farm products the more as it expands by force of example throughout the whole eastern territory and in a form which involves no additional cost after installation, a quite different effect than that produced by increasing the area of cultivation alone.

In the province of Ontario where an act of Legislature permits of financial assistance being given by municipalities toward the drainage of farm lands, the Provincial treasury advances funds to cover debentures issued for the amount of work approved by the municipal council upon a survey, plan and estimate furnished by a competent inspector of drainage, seventy-five per cent. of the cost of the improvement, but not exceeding one thousand dollars in any one instance, being advanced by the municipality upon the completion of the work. Interest is charged at the rate of five per centum per annum upon the sum advanced, the owner of the land which is so improved, agreeing that such principle and interest shall be added to the municipal taxes thereon in ten or twenty annual payments. This, he is well able to do, as the first



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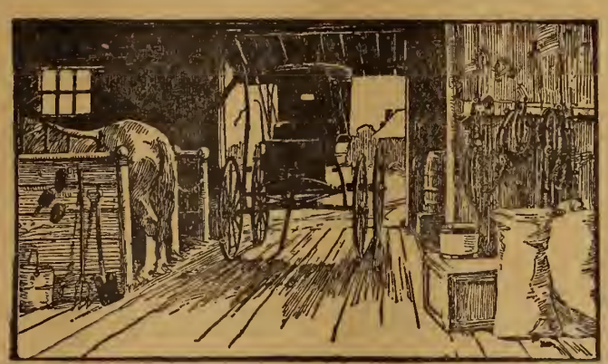
WHEN you own a Ford you can do away with many articles that are a source of continuous expense to the man who still drives a horse. For instance, not only your driving-horse and buggy, but the single harness, blankets, whips, currycombs, brushes, horse-shoes, pitch-forks, feed-bins, etc.

In their place you have a speedy, dependable, dignified, roomy Ford Car—complete in itself. It is vastly superior to the narrow, cramped buggy that travels so slowly. And when a Ford is standing idle it does not eat three meals a day, and it requires no "looking after."

A Ford will save you time, trouble, and money. It is the utility car for the busy farmer and his family.



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This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex, N. B.

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CANADIAN POULTRY REVIEW, 41st year of publication. Bigger and better than ever. Departments conducted by specialists. Seventy-five cents year, two years one dollar. Sample free. 184 Adelaide St West, Toronto. Ont.

Willow Glen Shorthorns

Entire show herd for sale. See our record at the recent Halifax show. All prize-winners from three year old cows down bred by myself, and sired by Champion and Sire of Champion Stately Monarch. Write for particulars.

A. N. GRIFFIN,
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Spruce Grove Farm Guernseys

FOR SALE—Four Bulls fit for service also some Yearling Heifers and a few Bull Calves.

D. C. McKAY & SON,
SCOTSBURN, - - Nova Scotia

Newburn Hill Stock Farm

Our present offering is one pure bred Short horn Bull, 11 months of age, also a few Heifers from one to three years of age. All of good milking qualities.
Beef, Hay and Potatoes in car lots.
Choice Cultivated Strawberries a specialty
FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
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Firshade Farm R.O.P. Shorthorns

Present offering, 2 Bull Calves, One Heifer, three years old.

P. R. L. FAIRWEATHER,
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A handsome, well-grown Guernsey bull. Sire purchased from the Experimental Farm, Ottawa; dam of equally good breeding, and a heavy producer. Will be sold reasonable. Full particulars on inquiry.

SARAH E. MOSES SMITH,
Woodwards Cove, - - - N. B.

Advertise in the FARMER

seasons return is as good as 25 per cent of an increase in crop from that particular land, which carries the burden of cost and by this method the farmer who is in need of financial assistance is not called upon to assume a high rate of interest, and in event of selling the property before full payment is made, the burden of cost of the improvement remains therewith. Along with this system, which shows the Government to have implicit confidence in the result of its own teaching, there is in every Ontario town of consequence, someone who carries a stock of farm tile so that it has become an almost automatic proceeding on the farmer's part to load up a quantity of drain tile on his way home, and next lull in farming operations sees the tile put into the ground, and so without any large expense or wasted effort the system of drainage is completed in a comprehensive way according to the plan laid down by the Engineer as to levels, direction of flow, size of tile used for mains, branches, outlets, etc.

The other provinces already have made considerable of an advance toward the encouragement of farm drainage by the loan of ditching and tile making machinery, and this policy so far as it goes has been favorably commented upon by those who are in a position to observe the result of operations carried on. Should they go still further and assist as in Ontario, the method of financing farm drainage upon the security of the improvement when vouched for by municipal authorities, the same already having passed the experimental stage in that province, it would undoubtedly prove equally "good business" elsewhere.

Four things a man must learn to do
If he would make his record true:
To think without confusion clearly;
To love his fellow-man sincerely;
To act from honest motives purely;
To trust in God and heaven securely
—Henry Van Dyke.

STRAWBERRY PLANTS !

We again offer to the strawberry growers of the Maritime Provinces a wide range in varieties of well grown, true to name strawberry plants. We have Senator Dunlaps, Glen Mary, Haverland, Bubach, Buster, Sample, Arnout, Wm. Belt, Warfield Williams, Dr. Burrell, Early Jersey Giant, Kellogg's Prize, Kellogg's Premier, Portia, Progressive and Frances.

Write for our free Catalogue with description of varieties and price list.

CYRUS & MANNING ELLS
Port Williams - - Nova Scotia

FOR SALE !

We have for sale a breedy, growthy bunch of young Shorthorn bulls, different ages, most of them are bred very strongly along milking lines, yet they would be a credit to any beef herd.
would be a credit to any beef herd.

We are booking orders for spring delivery of our large English Berkshire young pigs. Not the short chubby type, but the lengthy, growthy and large.

L. M. ANDERSON, Sackville, N. B.

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S. C. BROWN LEGHORNS

Twelve out of thirteen firsts competed for at Fredericton and Moncton, January, 1918. Some fine stock of both varieties for sale, including first prize Brown Leghorn cockerel.

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FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

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Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

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Published Twice-a-month in the Interests of the Farmers of the Maritime Provinces of Canada

Vol. 23 SUSSEX, N. B., FEBRUARY 19, 1918 No. 10

Prompt Shipments Assured and Quality Guaranteed

Manufacturers, today, are laboring under difficulties, because of the scarcity of materials, shortage of labor and delays in transportation.

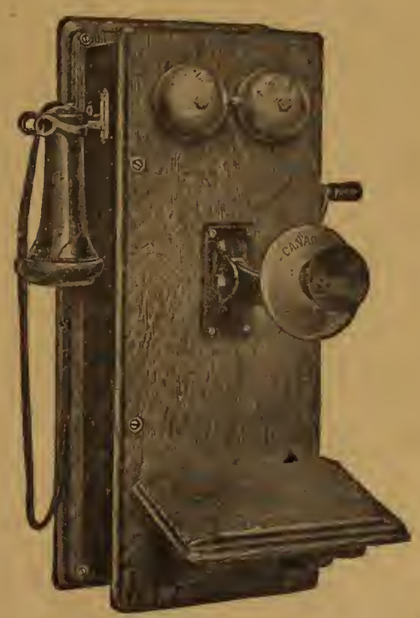
Notwithstanding these difficulties, we are able to assure good service, and can make prompt shipments of telephones and telephone materials.

We are maintaining the same high standard of quality in our telephones as we did before the scarcity of materials developed. The instruments we are making today are fully capable of sustaining our reputation as makers of the highest class telephones.

Everything we sell is guaranteed, and we carry everything required for equipping a complete telephone system, no matter how large or how small.

We are the only INDEPENDENT company manufacturing telephones in Canada for the INDEPENRENT operators and as such solicit the patronage of all who have the interests of the INDEPENDENT telephone movement at heart.

Our prices are right. Let us estimate on your requirements during 1918.



FREE BULLETINS

The No. 3 tells how to build rural lines.

The No. 6 describes our rural telephones.

The No. 5 describes our Presto-Phone Automatic Systems for large factories.

The No. 7 describes our small private systems for homes, garages, etc.

Canadian Independent Telephone Co., Limited

259 Adelaide St. West, TORONTO

Dairy School For Maritime Provinces

CONDUCTED UNDER THE JOINT SUPPORT OF THE DEPARTMENTS OF AGRICULTURE OF NEW BRUNSWICK, PRINCE EDWARD ISLAND AND NOVA SCOTIA,

—AT THE—

Agricultural College, Truro, N. S.

OPEN TO ANY WHO HAVE HAD AT LEAST ONE SEASON'S EXPERIENCE IN EITHER A CHEESE FACTORY OR CREAMERY, OR BY MAKING SPECIAL ARRANGEMENTS WITH THE SUPERINTENDENT.

Creamery Course

FROM MAR. 13th TO MAR. 26th INCLUSIVE

Cheese Makers Course

FROM MAR. 27th TO APR. 4th INCLUSIVE

Milk Testing and Cream Separators

FROM MAR. 13th TO APR. 4th INCLUSIVE.

THE PERSONNEL OF THE STAFF WILL BE ANNOUNCED NEXT ISSUE.

LAST YEAR'S COURSE HAD A REGISTRATION OF 41.

For particulars write W. R. Reek, Secy. for Agriculture, Fredericton, N. B.; W. J. Reid, Director of Agricultural Instruction, Charlottetown, P. E. I., or

W. A. MacKAY, Supt. in Charge, TRURO, N. S.

N. B. FARMERS' AND DAIRYMEN'S ASSOCIATION

42nd ANNUAL MEETING

FREDERICTON, N. B.

MARCH 12-13-14-15, 1918

Excursion Rates on Canadian Pacific and Canadian Government Railways at First-Class Single Fare.

The 1918 meeting promises to be one of the most successful in the history of the Association.

Prominent Agricultural Authorities will address the meeting on various topics.

Seed Fair in connection will be held March 12-15, in the Drill Hall, Normal School, Fredericton, N. B.

PRESIDENT MURRAY'S ADDRESS AT THE N. S. F. A., TRURO

Gentlemen:

It is with pleasure that I, as your president, extend to you all a very hearty welcome to this, our twenty-second annual convention. Meeting this year as we do in this busy Town of Truro, and looking back upon a fairly prosperous year, we farmers of Nova Scotia feel that we have many reasons to be thankful to the Giver of All Good Things for the blessings that He has bestowed upon us.

The year 1917, although not as bountiful in its harvest as the previous year of 1916, still owing to the increased acreage under cultivation and the average returns being fair, the grand totals amounted to just about the same, and the increased price obtained for the surplus leaves the farmer generally better off than they were a year ago.

Coming together here in Truro instead of at Halifax as we intended, we are brought forcibly in mind of the fact that we are meting once more under a dark war cloud, the most destructive that the world has ever known, but the silver lining to the cloud is that we are one year nearer victory than we were when we last met and we here in Canada must all suffer in whatever way we may be called upon to do. Still through it all we have a pride in the manhood and womanhood of this Dominion for the manner in which they have convinced the world that we take second place to no country in existence, and that we citizens of this Dominion, individually and collectively, can do our bit with the best the world has produced. When men high up in the councils of the proudest nation of the world, United States, speaking in public say that no greater honor can come to them than to have their name written side by side with Canada, we get some idea of our boys at the Front.

I have heard this town where we meet this year called the Hub of Nova Scotia, I presume owing to its railway facilities. However, whether it is entitled to that name from a commercial or geographical standpoint or not we farmers are all willing to admit that it is entitled to be called the Hub of Nova Scotia from an Agricultural point of view as it from the Agricultural College here that agricultural information radiates to all parts of the province. I have been over a considerable part of Nova Scotia since our last convention and have met a number of farmers, stock men and orchardists and was often struck with the number of times I heard the remark, "I have written to the College to find out what I had better do about this or that," or "I am going to write and find out from Principal Cumming, Prof. Trueman or Mr. Fuller (as the case may be)." It appeared to me that the minute they got up against something that they did not know or wrere not quite sure about they immediately applied to the College of Agriculture for the necessary information. I do not know whether we quite appreciate to the full extent the privilege of having such an institution where we can have our difficulties settled for us.

The Halifax Exhibition of 1917 was, I think without a doubt all circumstantances considered, the best held for several years. When an agricultural exhibition in a city with the limited population of Halifax will roll up such an attendance in war times as our last show did it surely must be considered a vast success.

I spent several days there and the Fakers did not do a thing to me . I spent several hours among them and watched their many ingenuous devices to rake an easy dollar, and also watched with much interest the fun which their customers had in blowing in a few dimes in trying to beat at the other fellow's game, but I was not detective enough to find anything particularly objectionable in the whole midway.

The racing was very good and reflected very creditably on the management and superintendent of that department as every race seemed to be won by the horse that was entitled to it.

The stock was about the same as usual with the xeception of the dairy cattle which every year for the last several years, to me at least, seems to improve rapidly. That department was helped out greatly by the exhibit from the College herd. Considerable of the stock in some departments showed the lack of care consequent to a scarcity of help on the farm and in the stock barns. But taking it all through it would at least hold its own with any show I have ever attended at Halifax.

Now, gentlemen, I am not going to take up much more of your time in talking about the past but I will ask your attendance for just a minute or two on the outlook for the coming year. As near as I can judge we are up against several problems which will require all our best efforts to save satisfactorily.

It is going to be very difficult to get seeds both as to grains and small goods so it is up to us who have seed

(Continued on page 187)

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 23. SUSSEX, NEW BRUNSWICK, FEBRUARY 19, 1918. Number 10.

Agricultural Societies as a Factor in Greater Production

Your Secretary wished me to address this Convention. I consider it an honor to have an oportunity to do so. This body, I take it, will in a large measure determine the trend of Agricultural effort during the coming spring. Your deliberations and decisions will have a far reaching effect in determining what we as farmers should aim for in our crop production next year. Your Association, made up as it is of representative farmers from every part of Nova Scotia, should definitely outline a policy which will serve to stimulate and guide our farmers in their agricultural endeavors.

As farmers, we realize we have an important National duty to perform. Action on the part of every individual is imperative. Equally important is it that this action be directed along well defined lines. My object at this time is to outline how material progress can be made through working up more enthusiasm in our Agricultural Societies, by bringing our people together for a definite purpose.

We have in Nova Scotia, as you all know, three Agricultural Organizations, each designed for a particular purpose. First, and what should be the leader in these organizations, is the Nova Scotia Farmers' Association. This is made up of delegates from the other Agricultural Organizations. These delegates are men selected from the other organizations, and who may be considered leaders in their respective districts, men who can report back to their vraious organizations the decisions of this body. Second, the County Farmers' Association which reflects, or should do so at least, the opinion of Agriculturists of their county. This body is made up of men from Agricultural Societies, as well as those not connected with such organizations. They meet together once a year or more and appoint delegates to attend this meeting. Third, we have the Agricultural Societies, of which there are some 263 in Nova Scotia, with a membership of some 10,500 farmers. This latter organization confine their efforts principally to the securing of sires for their herds, and subscribe amongst themselves some $20,000, to which the Government of Nova Scotia adds $15,000, or more. The Agricultural Society is supposed to have to do with everything calculated to advance agriculture in the community in which it is located. It is evident, therefore, that these organizations are dependent one upon the other, and active Agricultural Societies are necessary if County Farmers' Associations are to do what is required of them, and without active County Farmers' Asociations we cannot hope to have an aggressive Nova Scotia Farmers' Association.

The important thing, therefore, is to make the Agricultural Societies more active. Their activity, on the other hand, is influenced by the doings of the County Association, and the County Association is influenced by the Provincial Association. In short it seems that an agressive central organization is of first importance, next an active County Organization, and then as a matter of course you are sure to have active Agricultural Societies.

The question one asks themselves then is "What has this central organization done to help the other arganizations more or less dependent upon it for inspiration and guidance? What constructive policies have been outlined? What definite policy have you as deligates for this meeting? Do the delegates of this meeting represent their own views only, or are they representing the views of their various societies? Have you brought the members of your respective organizations together to discuss with them and formulate plans as to how you can turn your agricultural resources to the greatest national profit in 1918? Or are you here with no constructive plan? If you have no plan, or have not attempted to bring your community together at this crisis in our national life, ask yourself in where does your responsibility lie? Have you done your "bit," let alone your "best," in helping your community to measure up its posibilities?"

In the first place legislation should be enacted making it obligatory on the part of an Agricultural Society within a County to send at least two delegates to the County Farmers' Asociation Meetings. Means should be devised whereby expenses of delegates to this organization may be paid in part, at least, and, possibly by means of a per capita fee of say 10 cents to be exacted from each Agricultural Society and a like amount from the local Department of Agriculture. This would bind the Agricultural Societies to the County Farmers' Association, which we think is much needed at present. Under this arrangement a more effective County Organization would be posible. Through this arrangement matters of importance could be passed from the Agricultural Societies to the County Associations for general discussion there, and matters brought up at the County Associations discussed at the Meetings of the Agricultural Societies, and the delegates coming to the Central Association would fairly represent the views of the rural communities throughout. From this central organization something tangible could then result.

Such organization would throw some responsibility upon Agricultural Societies, they in turn would throw responsibilities upon the County Association, and then this organization would feel its responsibilities. Healthy development can be brought about only by placing responsibility upon our various organizations.

To illustrate the point I wish to make I will refer you to the efforts put forward in Kings County by the County Asociation. Notices were sent to both President and Secretary of each Agricultural Society requesting that they send delegates to on Agricultural Rally held under the auspices of the County Association, and at that meeting report as to what they were doing as an organization to assist in greater production. Three societies out of 13 reported. Members from other societies were present, no doubt, but they had nothing to report. I do not say that these societies did nothing, but their efforts if put before such a gathering may have stimulated greater activity in other societies. At this rally also the County Councillors were requested to attend, and their response to the call was all that could be xepected.

This meeting, or rally, was a decided success and the matters brought up there if acted upon by the members and reported back to the different Agricultural Societies would stimulate their some 600 members to greater activity.

The opinion of this gathering is set forth in the following resolution, adopted after full discussion of the various subjects:—

Reolution re Increasd Wheat Production

"Resolved that, owing to the fast "increasing demands that are being "made on our Dominion for wheat "and flour, resulting from the Euro-"pean War, we as an Association "feel it our urgent duty to stimulate "and promote the production of this "crop throughout our County so that "the maximum amount may be ex-"ported from our great wheat grow-"ing provinces of our Dominion to "help feed our and Allied Armies "and Nations in Europe, and thus "help bring the war to a speedy and "victorious conclusion."

Resolution re Increased Production of Clover and Turnips

"Resolved that, in view of the fact "of the scarcity and high cost of "our feeding stuffs, (concentrates), "resulting directly from the high "cost of production and indirectly "from the War, we as an Associa-"tion shall endeavor to urge upon "our members and neighbors "throughout our County the neces-"sity of devoting more of their ener-"gies to the production of clover and "turnips, two crops that can be eas-"ily and successfully grow on any "of our farms, and use our high "concentrates to a more limited ex-"tent, in conjunction with the above "crops to produce a finished pro-"duct."

Resolution re Live Stock

"Whereas, owing to the high cost "of feed, much live stock is put off "in a partly mature state, many "heifers fit for breeding are also "sold for beef, and calves vealed "that could be made into profitable "steers, and, whereas, we as farm-"ers should as a national service "protect our Nation's meat supply "by stopping this loss, and do every-"thing possible to increase our live "stock in order to protect our arm-"ies in the trenches by making a "shortage of meat impossible, there-"fore, resolved that this Association "advocate that some system be "adopted to limit the number of im-"mature live stock sold, particularly "to discourage the sale of good "breeding heifers for beef, and dis-"continue the sale of veal calves ex-"cept in cases where they will not "likely make good beef steers."

Resolution re Bean Growing

"Whereas, beans, owing to their "richness in protein, can in many "cases take the place of meat, and "whereas beans can be profitably "gorwn on almost every farm in "Kings County, therefore, resolved "that this Association think it ad-"visable for every farmer to do what "he can to increase the area in this "crop during the present year there-"by increasing the posible export-"able meat for army use."

Resolution re Care of Stable Manure

"Whereas four-fifths of the potash "and two-thirds of the nitrogen in "manure voided by animals is in the "liquid, and whereas these liquid "manures are often lost through "open floors, lack of proper litter for "absorbents, and outside leaching, "therefore, resolved that this Assoc-"iation do everything possible to "encourage tight stable floors, more "general use of absorbents, and bet-"ter housing of the manure in order "to prevent this loss as far as pos-"sible, thus increasing production "and rendering a National Service "thereby.'

Resolution re Agricultural Meetings

"Whereas, Agricultural Meetings "are a powerful factor in bringing "about efficiency on the farm, that "such effort on the part of the farm-"ers will increase production by in-"creased efficiency, but as such "meetings have in the past, been "poorly attended by farmers in "some sections where such meetings "were held, therefore, resolved that "this Association advise the more "general holding of Agricultural "Meetings and give assistance by "furnishing speakers, but that meet-"ings be held only when the farmers "of a district ask for them, and will "agree to assist in making the meet-"a success.

(Continued on page 188)

Developing the Farm Telephone

Prince Edward Island is Behind all Other Provinces in This Respect---New Brunswick Next

"How to make life more interesting on the farm," has been a subject for endless literary efforts, letters, newspaper articles, pamphlets and what not. All kinds of suggestions have been made, some good, many impossible. One of the greatest hoons to the farmer, however, is the rural telephone. That connection with his neighbor and the outside world has done much to ameliorate conditions that our forefathers faced and met. The rural telephone is no longer an experiment. It is a necessity. It brings to the door of teh farmer, the doctor, the neighbor, the markets and endless advantages that need not be mentioned. he telephone has revolutionized the whole rural life of communities in which it has been generally adopted.

In some of the provinces of Canada there has been intensive development of rural lines. Saskatchewan, which leads, has inaugurated a splendid system, under which her rural 'phones are installed.

The Government permits farmers to incorporate themselves into local Companies and to issue debentures in amounts sufficient to cover the construction of their systems. The construction itself and the material and apparatus used must be of the highest possible quality so that the Saskatchewan farmers' lines would be a credit to any operating telephone and telegraph Company in the world. The debentures hear interest at not to exceed 8% and principal and interest are payable in fifteen annual istalmets, so that a farmer has fifteen years in which to pay for his telephone system. That this method has proven satisfactory is best evidenced by the Government statement from which the following paragraphs are quoted:

"Taking the rural telephone companies first, we find that on May 1, 1916, these numhered 641. In the year ended May 1, 1917, a total of 111 new companies had been added and from May 1, 1917 to October 13, 1917, a further 109 companies have had their lines constructed and passed inspection, while 37 extensions to existing lines had also been completed. This makes the present number of rural telephone companies 861. On May 1, 1916, there were 18,150 subscribers to rural telephone companies; by May 1, 1917, there had heen added 5,663, and by Octoher 13, 1917, a period of only five and a half months, a further 6,089, making 426 more suhscrihers added this year as compared with the previous year. The total number of subscribers now stands at 29,902.

On May 1, 1916, there were 18,189 pole miles; in the subsequent season 6,667 pole miles were added and during the last six months 5,692, which hrings our total rural telephone pole mileage to 30,548."

The Sackatchewan farmer has found that a telephone saves so much expense in the course of each year that, notwithstanding the very high cost due to present day conditions, he cannot afford to he without it.

All of the Saskatchewan lines are built by contract and labour in the Prairie Provinces is not only very scarce hut very high. All the poles have to be shipped from Wisconsin and Minnesota. he telephones in that Province run ahout one per mile of poles, and the cost per telephone due to the conditions outlined is ahout $200.00. If it pays the Western farmer to spend $200.00 to build his mile of line and instal his telephone, why would it not pay a New Brunswick farmer to incur half that expense or even as great an expense if the Government demanded the same type of construction ?

It seems to me the Saskatchewan idea is the fairest means of promoting this kind of development, and it certainly gets the farmer his telephone. The only reason twice as many telephones were not installed this year in that Province is because the labour and material with which to instal them wre not available.

In Alherta, where the Government will not permit farmers to build their own lines and is unahle to build them itself, because of the high cost of construction and the low rental at which it furnishes rural telephone service, I have been told there are anywhere from 20,000 to 30,000 applications for rural telephones on file. So you see the peculiar situation of one Government stihing development of this sort while its immediate neighhour does everything to encourage it.

If there were ever a time when the telephone on the farm is a real necessity it is right now, when lahour is scarce, prices for farm produce are high and increased production is necessary from a selfish as well as from a patriotic point of view. Any farmer or farmer's wife who has a telephone would say that it is the most necessary implement on the farm.

In the States of Georgia and South Carolina, town after town raised sums of money with which to assist farmers in their vicinity to huild rural lines into their towns. They did not do this to help the farmer as much as to help themselves, because they realized that every rural line radiating from their towns meant bringing that much more business into their town which might otherwise be diverted to a neighhouring town. If the two towns were twenty miles apart and a rural line from one went within five miles of the other town, the town with the telephone line was getting the business from fifteen miles of the adjacent territory instead of the ten they might normally expect to get. In that same part of the country hundreds of country physicians mortgaged everything they had to raise enough money with which to build one or two or more rural telephone lines into the country surrounding their offices, knowing that every subscriher on one of these lines and every neighbour of that subscriber would call on them for help when medical service was required.

In Nova Scotia, too, the government is awakening to the great value of the rural telephone. There a government superintendent oversees all work done under the act which permits the province to grant a honus of $20.00 per mile to rural companies. The work is carried out according to specifications laid down by the government and much has already been done to stimulate the construction of farmers' lines.

In Prince Edward Island and New Brunswick, however, the progress along these modern lines has been practically nil. New Brunswick stands second last on the list of the provinces, in regard to the construction of rural lines. So much depends on the telephone, that to argue in favor of its advantages would be to waste time. With so many evidences at hand of its great service in country districts, it would appear that a well thought out plan of telephone construction in rural New Brunswick would be in order. There is now no question as to successful management. That rural lines may be built well and at the same time made to provide revenue for operation and maintenance is established beyond doubt. Arrangements could be made with trunk line companies to give connection to the smaller systems and thus the whole province could be put in touch with the outside world.

hTe inauguration of a well defined policy of governmental assistance would need no elaborate advocacy or defence. The principal danger to be guarded against is that of insufficient revenue to ensure modern equipment and charges sufficient to meet operating expenses and keep the lines in good repair. Many rural lines have proved failures, simply because those directing them failed to appreciate that a poor telephone system is to be avoided at any cost, and that it costs money to guard against depreciation. Rediculously small tolls were charged on too many of these llnes, with the inevitable result that disaster, sooner or later, overtook the enterprises. Then, too, there has been a duplication of lines, which should be avoided. Too, many communities have been forced to support two hadly served lines, when one properly conducted telephone system would better serve the public need.

The New Brunswick government might well take into consideration the bonusing of rural lines, built, like those of Nova Scotia and other provinces, under competent supervision. Nothing will do more for the farmer than a well estahlished esystem of rural telephony. Excellence, however, should be the guiding principle of the undertaking. The old slipshod methods of hanging a wire to the hranch of a tree, or the peak of a harn, should be avoided. Only standard equipment should be tolerated. And last but not least the service charges should be sufficient to guarantee the successful operation of the system. With these safeguards, the provincial authorities would have little to fear from failure of any well digested scheme which might he worked out and to the appreciable benefit of many communities.

Wheat Growing in Nova Scotia

The following information recently published in Bulletin form by the Nova Scotia Department of Agriculture will be of interest to the farmers of the other Maritime Provinces, where a campaign for increased wheat production is heing conducted.

"There is no occasion, in beginning this press bulletin, to deal at length with the facts that wheat is the world's most important food product, that there is a world shortage of wheat and that plans are being perfected to conserve every possihle hushel of wheat for the use of our soldiers in Europe. Partially due to these considerations and partly to the record prices prevailing for flour, which in turn were the result of these self same considerations, there arose in the Spring of 1917 an unusually large demand for seed wheat in Nova Scotia. The principles that led to the 1917 rush into wheat sowing will assert themselves again in 1918 and it is likely that they will he enforced by more rigorous enactments for the conservation of wheat which will lead many a Nova Scotia farmer who may not, at the present time, he thinking seriously of the suhject to ultimately make plans for a substantial increased acreage of wheat.

Shortage of Seed in 1917.

Last year, the Provincial Department of Agriculture, tried to anticipate this condition and circulated statements in the month of February throughout the Province in regard to the seed situation. None the less, it seemed impossihle to arouse the interest of many until seeding was actually on when, despite the fact, that the Department supplemented the regular seed trade by handling several thousands of bushels of seed, a shortage occurred and at the last as high as $4.00 a hushel was paid for very ordinary seed. There is no need of this condition being duplicated in 1918, if those planning to grow wheat will make their plans immediately and get their orders placed with their seedsmen at once.

A Preparedness Bulletin

This press bulletin is being issued at this early date in December to help avoid the unpreparedness of 1917. It especially directs the attention of the seasoned grower as well as the amateur, to the importance of **securing their seed wheat supply at once.** But it also includes some warning in regard to the limitations of wheat growing in the Province which the inexperienced will do well to consider hefore going too heavily into the venture; for it would be bad husiness for the individual and for the country as a whole if extensive areas which would produce more food units in the shape of oats and other crops, were sown to wheat under conditions which would yield only a small return of that crop. The advice "Grow Wheat" is all right but it is better advice "To Grow Wheat on Land Suited to Wheat and Oats and Other Crops on the balance of the Plowed Land."

Increased Area of Wheat Crop in Nova Scotia

Prior to 1914, about 14,000 acres of wheat annually were grown in Nova Scotia with an average yield of about 20 bushels per acre. Recent estimates indicate an increased average of from 4,000 to 6,000 acres. The largest relative increase has been around the Bras d'Or Lakes in Cape Breton, where the Government Cereal Mill erected in 1915 has proven the means of increasing the acreage some ten to fifteen times. There has also been a signal increase in the Annapolis Valley following the erection of a roller process mill at Berwick in 1915. Unfortunately, wheat as well as other cereals did not produce large crops in this part of Nova Scotia in 1917 so that the Valley farmers may, unwisely we think, be discouraged in their efforts to grow wheat.

The Premier Wheat Growing Counties

The leading wheat growing counties of Nova Scotia are those counties in the northern half or the Province bordering on the gulf of St. Lawrence, viz., Antigonish, Pictou, North Colchester and Cumberland Counties. These counties are fairly well served

with wheat mills. In fact, the mills already established could handle more wheat than is at present brought to them. There should be included with these counties, the County of Inverness, in Cape Breton, where the conditions are very similar, but Inverness has lagged behind, due in part at least to lack of milling facilities. However, the new roller process wheat mill, which is almost completed at Inverness, should make up for this deficiency and, with the mills at present in existence, take care of a largely increased wheat acreage. Substantial progress has also been made in the vicinity of Meteghan, Digby County, where a modern roller process mill was erected some years ago. Parts of Hants County and the Musquodoboit Valley in Halifax County have also produced very considerable quantities of this important crop.

New Roller Process Mills

As an indication of a more extended interest in wheat growing in Nova Scotia, it may be mentioned that in addition to the mills referred to in the foregoing, which have been erected since 1915, the following additional roller process wheat mills are either in course of construction or have been recently completed; one at Boylston, Guysboro County, one at Gore, in Hants County, and one at Bridgewater, Lunenburg County. Six of these mills erected since 1914, have been assisted by the Provincial Department of Agriculture policy for encouraging wheat growing, and these together with some nine roller process mills in existence before 1915 and a substantial number of the good old fashioned French Burr mills ensure milling capacity for a much increased acreage.

Note:—This provincial Government aid has been confined entirely to mills erected in localities where roller process milling facilities were not heretofore accessible. No aid has been given in those central counties, where the magnitude of the industry warranted private unaided enterprise.

Wheat a Delicate Feeder

Since it is the intention of the writers of this bulletin to present the importance as well as the means of increasing wheat growing it seems the part of wisdom to begin by discussing the limitations of the crop. Wheat is more sensitive to its surroundings and requires the fertility of the soil to be in a more available condition than does oats. If, for example, a sod it turned under or barnyard manure is applied, it must reach a more thorough state of decomposition to produce a good growth of wheat than is the case with oats or in fact almost any other standard farm crop. Moreover, the wheat plant takes up about 85% of its food supply from the soil by the time it is half grown for which reason it requires soluble plant food in the early part of the season. This soluble plant food will be limited unless the soil is naturally rich or has been well fertilized. Oats on the other hand will often do well on sod land where the sod is only partly rotted. Moreover, oats do not require so much of the plant food from the soil early in the season and so a creditable crop may often be produced on land which would yield a very indifferent crop of wheat. The oat is a hardy feeder. Wheat is a delicate feeder. Hence it is a great mistake to grow wheat on any but well drained land which has been put into a fairly high state of tilth and fertility. If you have not this kind of land, stick to oats for your cereal crop.

Hoed Crop Land the Best

For the foregoing reasons, one should usually aim to grow wheat in Nova Scotia on land which, during the previous year, was under potatoes or roots or some other hoed crop. If, for some reason, there is not enough of this hoed crop land, try to grow the wheat on land which was plowed the previous fall and on which the sod has had some chance to decompose.

We have seen a few good crops of wheat on spring plowed sod land, especially along the Gulf shore section, but such land has always been in a good state of fertility, and has usually been a fairly light, well drained soil in which the sod has rotted rapidly. If it seems necessary to grow wheat on land plowed out of sod in the spring be sure to harrow very thoroughly and apply rather more manure or fertilizer than would ordinarily be used. Unless this is done results are likely to be disappointing. It is not good practice to grow two cereal crops in succession on the same bit of land, but if a piece of land, which during the previous year was in oats or barley, is the only piece available for this year's wheat, it may be used, provided it receives a considerably higher application of fertilizer or manure than would ordinarily be given.

Cultivation

If possible, the land selected should be fall plowed and left in a rough pulverized condition. As early as possible in the spring with the use of a disc harrow or a spring tooth harrow followed by a spiked tooth harrow, the land should be put in good mellow condition. If the land was not plowed the previous fall, spring plowing will be necessary, but since it will generally be light plowing, two furrow gang plows may, when available, be used. Too much importance cannot be laid upon giving the land sufficient harrowing. The seed bed cannot be in too fine a condition. It is important that the land be rolled, for wheat more than any other cereal crop requires a firm seed bed. Some do this immediately after seeding but it can be effectively done after the plants are up to 4 inches or so high.

Manuring and Fertilizing

Provided the previous crop of potatoes or roots was a bountiful one, there is no need for further application of manure or fertilider. But, if the previous crop was a moderate or poor one, it is important to add a small dressing of manure or fertilizer. Such a dressing should always be made when the previous crop was either a cereal crop or hay. A fair application would be from ten to fifteen loads of fine manure or 500 to 1000 lbs. of fertilizer per acre. This fertilizer may be either a "grain fertilizer" or may be a mixture of from 100 to 150 lbs. of Nitrate of Soda and 400 to 800 lbs. of either basic slag or acid phosphate. If the soil is fairly rich the Nitrate of Soda may be omitted. Five hundred to eight hundred pounds per acre of dogfish fertilizer or bone meal will give good results. A frequent practice, experimented with successfully by W. S. Blair, of the Experiment Station, at Kentville, is to apply about 100 lbs. of Nitrate of Soda acre after the crop is up. An equal amount of sulphate of Ammonia per would also give satisfactory results. Be sure to make such application on a dry day, else the leaves may be burned. Fresh manure applied in the spring is often the source of troublesome weeds. If it must be used, apply very early, so that the weed seeds may sprout and be destroyed before seeding.

Sow Early

The very earliest sowing possible is best for spring wheat. This gives a long period of slow growth while the weather is cool and so provides a strong root development. Moreover, from the standpoint of milling, early harvesting is important so that ample time can be allowed for the grain to thoroughly dry in the fields and early harvesting can only be ensured if the crop is sown early. Because this crop must be seeded early, only well drained soils are suitable, for the seed bed must be dry and warm at time of seeding. From 6 to 10 pecks per acre is the common amount of seed to sow. The best results on the average have been gotten from about two bushels per acre. Before sowing, the seed, no matter what its origin, should be treated for smut, bu the use of a formalin solution which is described subsequently in this bulletin.

Order Farm Machine Repairs Now Delay May Mean Loss

HAVE YOU thought of the difficulty you are going to have this year in getting repairs for your machines? It is the most important thing for you to be thinking about right now. Your crops may depend upon it.

You, no doubt, realize that all manufacturers are hard put to it to get materials; and the transportation facilities, freight and express, are congested to such an extent that shipments go through very slowly.

The implement manufacturer and agent in Canada realizes this today and the utmost is being done to take care of the farmers' requirements for repairs. Unless the farmers are also foresighted, many of them are likely to realize the difficulty too when the season for field work opens. They are going to be greatly handicapped if they wait until just before they are ready to use the machines before overhauling them and finding out what parts will have to be replaced.

We cannot urge you too strongly to get busy on this at once. Overhaul every machine on your place and see just what parts you need to put them in good working order, then place your order at once. This is the only way you can be sure of having the new parts in time for use.

We are making every possible effort to get ample stocks of repair parts to convenient points where you can get quick service. International Harvester branch houses are located in all parts of Canada and they always carry large stocks of repairs. Besides there are thousands of local agents who carry a good supply of the parts usually called for. Under normal conditions, you could expect quick action on repair orders sent to us or to any of our agents, but at this time conditions are not normal and it is a personal and patriotic duty to look ahead and plan ahead and be prepared to avoid confusion and crop-wasting delays.

Remember the first orders received are the first to be served, so you can recognize the importance of overhauling your machines now and seeing what you will need and getting your order placed. Better be ready than sorry. Do it now.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

A Good Seeding Down Crop

There is no better crop to seed down with than wheat. We strongly recommend a mixture made up somewhat as follows per acre: Timothy—6 to 10 lbs; Red Clover—7 bs.; Alsike Clover—2 lbs. Should Alsike clover seed be considerable cheaper than Red Clover, we would recommend a little more Alsike and a corresponding lesser quantity of red clover.

Seed

If you have grown good wheat on your own farm, you cannot do better than put some of thiis through the fanning mill for your use next spring. Home grown acclimated seed, if the kernels are good and plump, is generally the best. If you have no such wheat of your own, inquire of your nearest neighbors who haev been successful wheat growers and buy from them. If neither of these sources are available, you will have to go to your seed merchant, but be sure that he gives you a good article even if he is compelled to ask a fairly stiff price for it. If you do not know where to get the kind of wheat you want, write to the College at Truro, or to S. J. Moore, Dominion Seed Inspector, Truro, and they will direct you to your nearest source of seed supply. But whatever you do, plan for your seed supply now.

Western Seed

There will not be a very large supply of good seed wheat available in any of the Maritime Provinces this year. Fortunately, however, the quality of the Western crop is superior. The Seed Branch of the Federal Department of Agriculture, through their Seed Grain Purchasing Commission are saving at the Government Elevators considerable supplies of Western grown wheat suitable for seed.

Seedsmen and co-operative farmers Associations, who are in a position to handle carload lots, are recommended to get in touch with G. H. Clarke, Seed Commissioner, Department of Agriculture, Ottawa, or M. Cumming, Secretary for Agriculture, Truro, N. S., who will advise the necessary means to get carload lots of seed from this source.

Provincial Policy

It is the policy of the Nova Scotia Provincial Development of Agricultural Resources Committee to assist seed firms and co-operative farmer's organizations to purchase seed wheat in carload lots so that they will get the advantage of lower prices, and sell to farmers at proportionately lower prices. Any firm or organization who are in a position to dispose of approximately a carload or more of seed wheat should communicate at once with M. Cumming, Secretary for Agriculture, who will advise them of the provisions of the policy.

Variety

Practically no winter wheat is grown in Nova Scotia. The winters are too open to afford protection for the plants. Spring wheat is the stand by. he following are the best known varieties grown in the Province: White Russian, Red FiFfe, White Fife and Marquis.

White Russian has generally proven the hardiest of these varieties and the largest yielder. Unfortunately, the grain is somewhat starchy and soft and will not give as large a percentage of flour or as good a quality as the other varieties. Nonetheless, the quality can be made almost equal to the best if the wheat is thoroughly dried in the stooks before it is hauled to the barn. The details of this practice are set forth on one of the last pages of this bulletin. Some millers would like to see this variety eliminated from the Province but because of their successful experience with it, many farmers are determined to stick to it.

Red Fife is the best known of the harder strains of wheat. In general,

(Continued on page 170)

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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The Maritime Farmer, instead of giving you one receipt in the year for a paid subscription, sends you 24, or one every two weeks. You will find it on the GREEN COLORED LABEL on which your address appears. The date printed thereon is that on which your subscription terminates. If on payment of your subscription the date is not changed within two weeks, please notify us. No other receipt will be sent.

FEBRUARY 19, 1918

DATES OF ISSUE.

March 5-19
April 9-23
May 7-28
June 11-25

RAISING MORE PRODUCE

It's over three years, now, since the Maritime Farmer called attention to the need of increased farm production. During that tiime many campaigns have been instituted to bring this about and to effect savings, after the harvests be gathered. The Maritime Farmer figured in 1914, that with millions of men taken from the farms of the world, distress and want must follow. That both are impending is admitted. There will be a world shortage of foodstuffs this year, and 1919 promises much worse conditions. With that outlook, it should not require much to convince everybody that Canada should provide her largest possible crop next summer, and we in the Maritime Provinces should see to it that we will be among the leaders in Canada as food producers. One of the principal crops needed is wheat. Of course, the Maritime Provinces have their limitations as wheat growers, but we can do much to add to the total output and hundreds of farmers will be able to produce sufficient wheat to make them independant of the west, so far as flour is concerned. Then there is the by-products to be considered and these will have a very special value this coming fall, in view of the already marked scarcity of mill feeds. Of course there is the labor problem to face, but we should remember that those of us at home are favored as compared with the boys, who are valiantly fighting for Canada in the cold, mud coated trenches of France. To feed them and to feed ourselves, every possible sacrifice should be made. And apart from the duty we will perform by so doing, every farmer has the assurance that he stands to profit financially as well. Let us repeat the appeal to all loyal farmers, "Make the coming year a banner production twelve-month on your farm."

* * *

CLEANING UP MILITARY HALIFAX

Months ago the Maritime Farmer appealed for a cleaning up of the military farce at Halifax. The conditions there were little short of a disgrace to Canada. For over three years many business men of that city wore the king's uniform, drawing pay, varying from lieutenants to colonels. At the same time these men, in too many instances, attended to their every day affairs, so that the country was being bled white to maintain conditions unwarranted by the serious financial obligations which the war was imposing upon Canada. The Maritime Farmer not only protested through its columns against this waste of public funds but it took the matter up with Ottawa and insisted that something be done to end it. Our stand was that if there were any sinecures in the gift of the government, the snaps should go to returned men who had been wounded in France, but who had recovered sufficiently to enable them to sign a check, or discharge some other equally irksome or onerous duty. Now the change has been decided upon. The "graft" days of the Halifax garrison are over. Those officers, who have been fighting bloodless battles in the "Garrison City" are to be given short shift, some of them have been dismissed. Others will follow and the jobs will be filled by real fighting men. Another change that will be welcomed is the retirement to civil life of a number of clergymen, who draw pay as chaplains to the garrison forces, retaining at the same time their positions with their several churches. One chaplain will look after the spiritual welfare of the men, with whatever outside assistance he requires. Too much credit cannot be given to Hon. Frank B. Carvell, minister of public works, for this important reform. Mr. Carvell undertook to bring about the change and with characteristic directness, he performed what may be termed a highly successful operation. Canada needs men in civil life and the "heroes" of Halifax will doubtless welcome the opportunity to perform a real service for Canada by devoting all of their time to their businesses, instead of only part of it, as they did when they were being doubly paid by the militia department. Mr. Carvell sold a nice lot of victory bonds when he started in to reduce the pay list at Halifax.

FARMERS SHOULD ORGANIZE

Events transpiring throughout the world indicate that a violent wrench will be given old time ideals, when this cruel war is over. No more will well recognized ideals of pre-war times prevail. There is to be a general shaking up in the affairs of this mundane sphere. The revolution in Russia is leading to conditions that no man can forsee. Anarchy, more advanced than its staunchest supporters dreamed of, is rampant in that blood-soaked and unfortunate kingdom. As for Germany, the hope of the world lies in the democracy of that military ridden country. Even staid old England will awaken, as she never dreamed of doing, when the last gun is fired. There the workers are uniting to protect rights already won and to demand new reforms. In Canada, too, labor organizations are developing new strength and will assert what they deem to be their just demands. No reform of that character can be effected without affecting the farm interests of Canada. There are many things in common between the damands of organized labor and the farm but there are other things which labor organizations are calling for which will adversely affect farmers. And these adverse problems will have to be fairly met when war is concluded. How can they be met, unless farmers take a hand in the "organization" game? In the Maritime Provinces something has been accomplished along these lines, but there is no organization, founded on agriculture as a profession, which, forsaking all else, cleaves to agriculture and its interests. Labor is ever represented in the legislative halls of Canada. Other interests have their parliamentary representatives, but agriculture has yet to awaken to the need viseing all legislation calculated to affect the interests of the farm industry. Every necessary step should be taken to combat legislation inimical to the welfare of farm interests. This can only be done through a strong well organized agricultural organization. No such exists in the Maritime Provinces today. There are farm organizations but they are all devoted to one or other of the special sides of farming and no well defined movement to resist encrouchment on the recognized rights of the farm has been inaugurated. Is it not time that something more definite along these lines was inaugurated? Has not the time arrived for farmers to assert themselves along proper lines. We do not mean that petty opposition should be directed against all and sundry legislation, but the farmer should make his voice heard in the land, AS A FARMER AND NOT AS A POLITICAL HACK FOR THIS OR THAT PARTY. The conclusion of the war will render this doubly desirable. The coming meeting of the New Brunswick Farmers and Dairymens Association would be a good time to start something along new and progressive lines.

A PLAN FOR MONTHLY MEETINGS

The men who have to do with the garnering and conserving of the Empire's food resources must plan for the future, if our soldiers and our Allies are to have a sufficient supply of food to enable them to carry the war to a successful termination. These men must look beyond the present. They must look into the future and plan now now for the source of supply from which they must draw supplies this year, next year and the following years. The unexpected may happen at any moment and consequently a little more than the ordinary needs must be attended to, so that the losses of goods in transit and otherwise may be surmounted. These men pass their findings and recommendations on to the British Government, who in turn communicate their wishes to the various food producing colonies. The Dominion Government is communicated with re the part that Canada is expected to perform. Immediately on receipt of such communications the Federal Government gets in touch with the heads of the governments of the respective provinces. Matters connected with agriculture are brought to the attention of the Department of Agriculture, and the Department gets in touch with the rank and file of the farmers through the press and by communications with Agricultural Societies.

The farmers are nobly responding to the various calls mads on them.

Many agricultural societies in the Maritime Provinces hold stated monthly meetings for the discussion of agricultural problems and for social intercourse. Some societies that were not heretofore accustomed to meet in this way, are beginning to realize the important place the Agricultural Society plays in getting the farmers together to do their utmost to win the war and are now planning to hold monthly meetings so that all communications re the empire's needs that may be directed to them may be acted upon promptly.

We would recommend all societies that have not yet put this plan in action, to do so at once, as a war time measure. We believe the farmers will be so well pleased with this system that they will continue to meet every month after the war is over. Try it!

* * *

"Our utmost" not "our bit" is what the empire demands in all lines of industry, if every line of action is to be conducted efficiently.

LIST OF PRIZE WINNERS AT THE NOVA SCOTIA PROVINCIAL SEED FAIR—TRURO, N. S., JAN. 18, 1918.

Special—Open only to members of the Canadian Seed Growers Association

Oats—Registered seed, any variety.

1—Ronald Chisholm, Antigonish, Banner, $5.00.
2—R. D. McKay, Balmoral Mills, Col., Banner, $4.00.
3—W. L. McFarlane, Fox Harbor, Cumb., Banner, $3.00.
4—John W. Murray, Balmoral Mills, Col., Banner, $2.00.
5—J. L. Cunningham, Bayhead, Col., Banner, $1.00.

Wheat—Registered seed, any variety.

1—W. L. McFarlane, Fox Harbor, Cumb., Red Fife, $5.00.
2—J. L. Cunningham, Bayhead, Col., White Russian, $4.00.
3—James J. Dunn, Lr. South River, Ant., White Russian, $3.00.
4—John W. Murray, Balmoral Mills, Col., Red Fife, $2.00.
5—R. D. McKay, Balmoral Mills, Col., Red Fife, $1.00.

Exhibits from Frize Winning Fields in Nova Scotia Fields Crops Competition.

Sec. 1—Wheat, any variety.

1—W. L. McFarlane, Fox Harbor, Cumb., Red Fife, $5.00.
2—James J. Dunn, Lr. South River, Ant., White Russian, $4.50.
3—R. M. Jackson, Jacksonville, C. B., White Russian, $4.00.
4—T. J. Grant, Antigonish, White Russian, $3.50.
5—R. D. McKay, Balmoral Mills, Col., Red Fife, $3.00.
6—J. Milligan & Sons, Kings Head, Pic., Marquis, $2.50.
7—Ronald Chisholm, Antigonish, White Russian, $2.00.

Sec. 2—Oats, Any Variety.

1—Alex. C. Chisholm, North Grant, Ant., Banner, $5.00.
2—Ronald Chisholm, Antigonish, Banner, $4.50.
3—R. D. McKay, Balmoral Mills, Col. Co., Banner, $4.00.
4—John R. Harrison, Maccan, Cumb., Banner, $3.50.
5—W. L. McFarlane, Fox Harbor, Cumb., Banner, $3.00.
6—James R. Hogan, Denmark, Col., Banner, $2.50.
7—James J. Dunn, Lr. South River, Antigonish, Banner, $2.00.

Sec. 3—Potatoes, any variety.

1—John R Harrison, Maccam, Cumb., Carmen, $4.00.
2—Alex. C. Chisholm, North Grant, Ant., Carmen, $3.50.
3—J. Milligan & Sons, King's Head, Pic., Irish Cobbler, $3.00.

Section 1—Wheat—White Fife

2—J. E. Harrison, Maccan, Cumb., $3.00.

Section 2—Wheat—Red Fife

1—C. C. McFarlane, Fox Harbor, Cumb., $4.00.
2—Allan MacDonald, St. Andrews, Ant., $3.00.
3—John W. Murray, Balmoral Mills, Col., $2.00.
4—R. D. MacKay, Balmoral Mills, Col., $1.00.

Section 3—Wheat—White Russian

1—Jas. J. Dunn, Lr. South River, Ant., $4.00.
2—R. J. Jackson, Jacksonville, C. B., $3.00.
3—J. R. Harrison, Maccan, Cumb., $2.00.
4—J. E. Harrison, Maccan, Cumb., $1.00.

Section 4—Wheat—Any Other Variety

1—Jas. J. Dunn, Lr. South River, Ant., $4.00, Marquis.
2—J. E. Harrison, Maccan, Cumb., $3.00.

Section 5—Oats—Banner

1—Alex. C. Chisholm, North Grant, Ant., $5.00.
2—R. D. MacKay, Balmoral Mills, Col., $4.00.
3—Ronald Chisholm, Antigonish, $3.00.
4—J. E. Harrison, Maccan, Cumb., $2.00.
5—J. R. Harrison, Maccan, Cumb., $1.00.

Section 6—Oats—Sensation

1—J. R. Harrison, Maccan, Cumb., $3.00.
2—George Retson, Brookside, Col., $2.00.

Section 7—Oats—Storm King—No Entries.

Section 8—Oats—Any Other Variety Named

1—John C. Chisholm, Lr. South River, Ant., $5.00, Sandy.
2—Lloyd Clifford, Brookside, Col., $4.00, Conqueror.
3—M. Campbell, Centreville East, Inv., $3.00, Wide Awake.
4—J. E. Harrison, Maccan, Cumb., $2.00, Ligowo.
5—George Sillery, Murray's Siding, Col., $1.00, Early Blossom.

Section 9—Oats, Black—Any Named Variety

1—J. E. Harrison, Maccan, Cumb., $3.00.
2—J. R. Harrison, Maccan, Cumb., $2.00.

Section 10—Barley—Two Rowed

1—J. R. Harrison, Maccan, Cumb., $3.00.
2—J. E. Harrison, Maccan, Cumb., $2.00

Section 11—Barley—Six Rowed

1—W. L. McFarlane, Fox Harbour, Cumb, $3.00.
2—C. C. McFarlane, Fox Harbor, Cumb., $2.00.
3—John C. Chisholm, Lr. South River, Ant., $1.00.
4—J. E. Harrison, Maccan, Cumb., .50.

Section 12—Buckwheat—Rough

1—J. E. Harrison, Maccan, Cumb., $3.00.
2—J. R. Harrison, Maccan, Cumb., $2.00.
3—George Retson, Brookside, Col., $1.00.

Section 13—Buckwheat—Any Other Variety

1—J. R. Harrison, Maccan, Cumb., $3.00.
2—J. E. Harrison, Maccan, Cumb., $2.00.

Section 14—Field Peas—Marrow Fat

1—J. E. Harrison, Maccan, Cumb., $2.00.
2—J. R. Harrison, Maccan, Cumb., $1.50

Section 15—Field Peas—Any Other Variety

1—Allan Bezanson, Hampton, Anna., $2.00.
2—Wm. Olie, Selmah, Hants, $1.50.
3—Wm. Olie, Selmah, Hants, $1.00.
4—John C. Chisholm, Lr. South River, Ant., .50.

Section 16—Field Beans—White

1—G. H. Landry, Lr. South River, Ant., $2.00.
2—J. R. Harrison, Maccan, Cumb., $1.50
3—J. E. Harrison, Maccan, Cumb., $1.00.
4—T. J. Grant, Box 335, Antigonish, .50.

Section 17—Field Beans—Yellow Eye

1—J. R. Harrison, Maccan, Cumb., $2.00.
2—A. W. Stevens, Wallace Grant, Cumb., $1.50.
3—G. H. Landry, Lr. South River, Ant., $1.00.
4—J. E. Harrison, Maccan, Cumb., .50.

Section 18—Field Beans—Any Other Colored Variety.

1—G. H. Landry, Lr. South River, Ant., $2.00.
2—H. Bowers, Great Village, Col., $1.50
3—Jas. J. Dunn, Lr. South River, Ant., $1.00.
4—Leander Vance, Masstown, Col., .50.

Section 19—Corn—Canada Yellow

1—Manning Chute, Berwick, Kings, $2.00.
2—T. E. Smith, Central Clarance, Anna., $1.50.
3—Allan Bezanson, Hampton, Anna., $1.00.
4—G. H. Landry, Lr. South River, Ant., .50.

Section 20—Corn—Any Other Variety—Flint

1—Alan Bezanson, Hampton, Anna., $2.00, Indian Yellow.
2—T. E. Smith, Cen. Clarance, Anna., $1.50, Sheffield Prize.

Section 21—Turnip Seed

1—R. V. Ditmar, Deep Brook, Dig., $4.00, Bronze Top.
2—Jas. R. Hogan, Denmark, Col., $3.00, Purple Top.
3—Albert C. Vienotte, West Northfield, Lun., $2.00, Purple Top.

Section 22—Mangel Seed

1—Albert C. Vienotte, West Northfield, Lun., $4.00, Long Red.
2—T. E. Smith, Cen. Clarence, Anna., $3.00, Long Yellow.
3—Allan Bezanson, Hampton, Anna., $2.00.

Section 23—Timothy Seed

1—J. R. Harrison, Maccan, Cumb., $5.00.
2—J. W. Murray, Balmoral Mills, Col., $4.00.
3—J. E. Harrison, Maccan, Cumb., $3.00.
4—C. C. McFarlane, Fox Harbor, $2.00.

Section 24—Clover Seed

1—Allan Bezanson, Hampton, Anna., $4.00, Common Red.
2—Jas. J. Dunn, Lr. South River, Ant., $3.00, Alfalfa.

Section 25—Potatoes—Beauty of Hebron

1—John Retson, Truro, Col., $3.00.
2—J. E. Harrison, Maccan, Cumb., $2.00.
3—Geo. Retson, Brookside, Col., $1.00.
4—Howard King, Onslow, Col., .50.

Section 26—Potatoes—Early Rose

1—J. E. Harrison, Maccan, Cumb., $3.00.
2—John Retson, Truro, Col., $2.00.
3—R. A. Harvey, Hilden, Col., $1.00.
4—Geo. Retson, Brookside, Col., .50.

Section 27—Potatoes—Any Other Early Variety—Named

1—J. R. Harrison, Maccan, Cumb., $3.00, Burpee's Early.
2—Geo. Retson, Brookside, Col., $2.00, Burpee's Early.
3—John Retson, Truro, Col., $1.00, Early Sunrise.
4—Boyd Clifford, Brookside, Col., .50, Silver Dollar.

Section 28—Potatoes—Gold Coin

1—Geo. Retson, Brookside, Col., $3.00.
2—John Retson, Truro, $2.00.
3—R. A. Harvey, Hilden, Col., $1.00.
4—C. A. Longard, Truro, .50.

Section 29—Potatoes—Carmen

1—J. R. Harrison, Maccan, Cumb., $3.00.
2—J. E. Harrison, Maccan, Cumb., $2.00.
3—Alex. C. Chisholm, North Grant, Ant., $1.00.
4—Geo. Retson, Brookside, .50.

Section 30—Potatoes—Empire State

1—Geo. Retson, Brookside, $3.00.
2—John Retson, Truro, $2.00.
3—Lloyd Clifford, Brookside, $1.00.

Section 31—Potatoes—Dreer's Standard

1—J. E. Harrison, Maccan, Cumb., $3.00.
2—Geo. Retson, Brookside, $2.00.
3—C. A. Munn, Leitche's Creek, C. B., $1.00.

Section 32—Potatoes—Green Mountain or Delaware

1—J. E. Harrison, Maccan, Cumb., $4.00.
2—Geo. Retson, Brookside, $3.00.

Section 33—Potatoes—Any Other White Variety—Named

1—J. E. Harrison, Maccan, Cumb., $3.00, Imp. Pink Eye.
2—Geo. Retson, Brookside, $2.00, Irish Cobbler.
3—John Retson, Truro, $1.00, Silver Dollar.
4—C. A. Longard, Brookside, .50, Vix Perfection.

Section 34—Potatoes—Clark's No. 1 or Dakota Red

1—Alex. C. Chisholm, North Grant, Ant., $4.00.
2—J. E. Harrison, Maccan, Cumb., $3.00.
3—R. E. Harvey, Hilden, Col., $2.00.
4—C. A. Longard, Brookside, $1.00.

Section 35—Potatoes—Garnet Chile

1—E. R. Byers, Clifton, Col., $3.00.
2—Geo. Retson, Brookside, $2.00.
3—Leander Vance, Masstown, $1.00.

Section 36—Potatoes—Any Other Late Red Variety—Named

1—J. E. Harrison, Maccan, Cumb., $3.00, Bliss Triumph.
2—Geo. Retson, Brookside, $2.00, Bliss Triumph.
3—Lloyd Clicord, Brookside, $1.00, Maggie Murphy.
4—John Retson, Truro, .50, Maggie Murphy.

Section 37—Potatoes—McIntyre.

1—J. R. Harrison, Maccan, Cumb., $3.00.
2—J. E. Harrison, Maccan, Cumb., $2.00.
3—John Retson, Truro, $1.00.
4—George Retson Brookside, .50.

Section 38—Potatoes—Any Other Dark Skinned Variety—Named

1—J. R. Harrison, Maccan, Cumb., $3.00.
2—C. A. Munn, Leitche's Creek, C. B., $2.00, C. B. Black.
3—John Retson, Truro, $1.00, Vickers.
4—Howard King, Onslow, .50.

SEED DISTRIBUTION

Farmers Requiring Seed Should Place Their Orders With Their County Councillor Immediately

During the past three weeks every County Council with the exception of Kings Co. which meets January 22nd, has been approached and assistance in the Greater Production Campaign requested. Invariably plans have been formulated and in several cases the Councils have arranged for collecting the orders, distributing the seed and financing the transaction in conjunction with the Provincial Department of Agriculture. The result will be that a very thorough campaign for wheat acreage will be carried on and as information comes in the necessity for a great effort on the part of everyone becomes more apparent.

Those undertaking the work of the canvass will appreciate any assistance that can be given by individual farmers. Everyone requiring seed wheat, oats or barley should send in their order to their County Councillor immediately thus eliminating the necessity of a canvass.

The responsibility in this campaign brought about by war conditions must be borne individually or the required results cannot be obtained.

The Department of Agriculture will purchase the seed through the Seed Purchasing Commission of Canada Wheat will cost $2.50 per bushel F. O B. Quebec; the freight is as follows: to Campbellton 9c per bus.; to Newcastle and Chatham 9 3-5c per bus.; to Moncton 10½c per bus..; to Fredericton and Centreville 10½c per bus. The cost of bags and handling charges at this end will be extra. Oat prices will be given out immediately they are available.

The orders for New Brunswick must be placed by the Department with the Seed Purchasing Commission at an early date.

Assist the Councillors by sending your order to them immediately.

TO DRIVE AWAY MICE AND RATS

Chloride of lime sprinkled where ratts or mice are frequent will drive them away.

When using it keep the lime in a large bottle well corked, for it must be strong. Mice heartily dislike peppermint and will not go in drawers or boxes where it is kept.

TOP DRESS all Crops with **Nitrate of Soda,** no matter what other fertilizers you may have used—100 pounds per acre for seeded crops and 200 pounds per acre for the cultivated ones. The increase will yield large profits over cost.

Write on post card for our money making books

WILLIAM S. MYERS, Director
25 Madison Avenue, New York

WHEAT GROWING IN NOVA SCOTIA

(Continued from page 167)

it has not the reputation of giving quite as large a crop as White Russian but, on the other hand, millers claim more flour per bushel and better flour at that. A fairly well recognized strain called the "MacKay Strain" has been developed in North Pictou and Colchester Counties, which is somewhat hardier and earlier maturing than the western Red FiFfe. This strain has been quite well distributed of recent years and from our observation is to be highly recommended wherever it can be secured.

White Fife possesses in the main the same characteristics as the Red Fife. It is a popular wheat in parts of New Brunswick but is not now largely grown in Nova Scotia as the other varieties have superceded it. However, White Fife still has some strong friends in the Province, but our observations lead us to pronounce it as generally less satisfactory than either Red Fife or White Russian.

Marquis which is now recognized as the leading wheat of the Prairie Provinces, has been tried to a considerable extent in Nova Scotia. Some report very favorable results but on the College Farm, Truro, and at some other places, this wheat has not done as well as the aforementioned varieties. So far as milling qualities are concerned, it ranks with the best.

The major part of the seed wheat supply available under the arrangements made by the Seed Branch at Ottawa is Marquis. From our present information, we would much prefer this to poorly selected Red Fife or any other sort and consider that if other varieties are not easily obtainable, farmers will make no mistake in getting Marquis from this source. Before this Bulletin is published we hope to have completed arrangements for a supply of Red Fife. There is little White Russian available outside of local supplies in the province.

Harvesting Wheat for Milling Purposes

Whether the grower selects White Russian, which is always a fairly soft wheat, or the Fifes or Marquis, which are harder wheats, he will often harvest under the prevailing climatic conditions, softer wheat than would be harvested in the Western Provinces of Canada. However, in many years a hard wheat may be harvested and in any year the quality of the wheat may be materially improved by proper harvesting methods. In this connection we submit herewith the experience on one of the older millers of the Province, who, after twenty-five years of work, says that "with proper care there is no trouble in getting even White Russian wheat in good condition." He writes as follows:

"White Russian wheat in particular and in fact all wheats should be left until the grain is good and ripe, and then cut and left in stooks from ten to fifteen days or longer if possible. Most people are afraid of a shower of rain on their wheat when it is in stook. A good shower seems to make it in better condition for milling when it is properly dried out before putting in the mow."

"In noting the different conditions of wheat which we have handled in the last few years, we have learned that most of the soft wheat is caused by cutting the wheat straw too close to the ground, gathering up a whole lot of green clover and putting it into the mow perhaps the next day after it is cut in case it might get a shower of rain. The green clover, of course, starts to sweat in the mow and the dampness is taken up by the wheat."

"It should be mentioned," continue this miller, "that certain varieties, such as the Fifes and the Marquis, will not stand being left in the field until they are dead ripe as will the White Russian. These varieties when left to become too ripe will shell badly." But be concludes, "no matter what the variety, it is good practice to allow the wheat to stand in stooks for ten to fifteen days and he recommends, if possible, that threshing be done directly out of the field so that the wheat will not have chance of sweating in the snow.

Treatment of Seed for the Prevention of Smut

All seed wheat, no matter what its source, should be treatd with the formalin solution in order to prevent smut. Use one pint or pound of 40% formalin solution, which may be obtained at any druggist and other stores as well, in about 40 gallons of water. The wheat may be put in sacks and suspended in tht solution to soak for five minutes, after which the grain may be spread out on the floor and dried. A simpler way is to pile the wheat on a floor and apply this solution with a sprinkling can, shoveling the grains over until all are thoroughly wet. This treatment will destroy the destructive smut known as bunt or stinking smut. It will not destroy the "loose smut", which, however, seldom does very serious damage. There is a treatment for this loose sfut known as the hot wat r treatment but it is a difficult and rather dangerous one to use.

How Much Wheat for Nova Scotia

According to our last decennial census, 12,152 acres of wheat were grown in Nova Scotia in the year 1910. The following table contains the number of acres per county:

County	Acres
Annapolis	201
Antigonish	1952
Cape Breton and Victoria	56
Cape Breton South	11
Colchester	1164
Cumberland	2891
Digby	6
Guysboro	117
Halifax	172
Hants	626
Invernesss	205
Kings	334
Lunenburg	63
Pictou	4362
Richmond	21
Shelbourne and Queens	2
Yarmouth	2

Since 1910 there has been quite a substantial increase in the wheat acreage which is now estimated by the Census and Statistics Office at Ottawa at 16,200 acres, an dby our own Department of Agriculture at Truro as nearer 20,000 acres. In comparison with these figures the Nova Scotia acreage in 1880, before the western proviinces were extensively opened up, was 45,045 acres, so that it would seem reasonable to expect that, at the present world's food shortage, the province should grow much more wheat than at present, although as already set forth, it would be a great mistake to substitute poor fields of wheat for good fields of otas. As a partial basis for an estimate of the possibilities, we may state that there are approximately 53,634 occupiers of land in Nova Scotia. Of this number, 1143 occupy one acre or less; 6227 occup between one and five acres each; 12,652 occupy between 11 and 50 acres; 13,278 occupy between 51 and 100 acres; 10.717 occupy between 100 and 200 acres; and 4,852 occupy 201 acres or over. It would seem reasonable to suppose that in a country where wheat grows reasonably well, every farmer in the last four classes should average at least an acre of wheat. Many now grow from three to ten acres each and these one would think, would make up, by their increased acreage, for those who will not grow any at all. On this basis Nova Scotian farmers would be making a very modest contribution were they to produce at least 41,499 acres for which there would be available ample land which was the previous year under some kind of a hoed crop. Even at that, the wheat production would seem small, amounting, at 20 ushels per acre, to a little less than 1,000,000 bushels, equal to about 200,000 barrels of flour. None the less this would be a substantial contribution which Nova Scotia might make toward helping out the food situation in these war times. To do it would mean the importation of a considerale quantity of seed for it is doubtful if there is more than enough seed on hand now than for between

Gardens Pay Dividends

when they are handled right, particularly now that everything eatable is so expensive.

Nothing is more important than the selection of seeds, and for this the safest guide is our new Illustrated Catalogue of

EWING'S SEEDS

No unworthy variety gets into this Catalogue—and no poor seeds go out to those who order from it.

Ewing's Seeds have produced forty-five successive and most successful crops in Canadian gardens and fields, and are ready now for the forty-sixth. Why not have a share in it?

Write now for this Catalogue, and if your Dealer hasn't Ewing's Seeds, order from us direct.

THE WILLIAM EWING CO., LIMITED
Seed Merchants, McGill Street, Montreal.

Ewing's Detroit Dark Red Turnip Beet

Valuable for its remarkable uniformity and smoothness; size medium; flesh rich red, fine-grained, tender and remaining so for a long time; admirable for either summer, fall or winter use. The tops are dark-colored and vigorous. One of the best varieties for the home garden or market and equally good to store for winter. Lb. $1.50, ¼ lb. 50c; oz. 20c; Pkt. 5c. Sent postage paid — cash with order.

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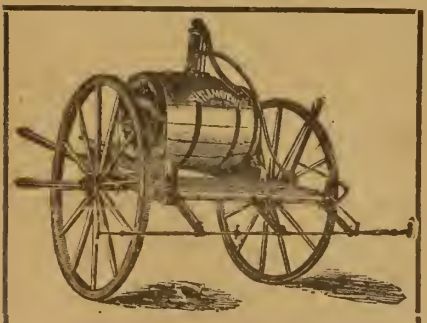

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Two Bushels to One Next Season—Sure

Let's help Food Controller Hanna double the food production this year. If you do your part, you will DOUBLE YOUR PROFITS. Doing something for your country and for yourself at the same time is good patriotism and good business. "Double Your Crops," you may say, "is very good advice, but how is it to be done?" We answer, "by using the very highest grade of Fertilizer," such as our "Best-by-Test" Brands. Consult with us about your soil and your crops and we will help you decide what is best to do. *Every pound of our Fertilizer is guaranteed.* We have full supply of all kinds up to full strength of analysis. We give special rates where farmers club together and order in car load lots.

"Best-by-Test" FERTILIZERS

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15,000 and 20,000 acres. Seed for the extra 20,000 acres would require about 40,000 bushels, which may be obtained locally and in the West if plans are quickly made, but which cannot be secured if farmers hold back their orders until spring.

Probably the increase will be less than we have set forth, but we have thought it owrth while to present a few figures, conveying some idea to those who may not have studied the question of Nova Scotia's possible contribution to the principal food crop of the world—wheat.

However it is not a consideration of the provincial crop which will count in this crisis. The practical question is what do you and your fellow farmers in your community plan to do. If you make your plans now, seed can be obtained. If you wait until spring, seed may be unobtainable.

Notes

1. Place your orders for your seed supply now.
2. To help reduce cost of seed and to ensure an abundant supply the Department of Agriculture have a policy to assist dealers to purchase car load lots. Correspond in regard to this with the Secretary of Agriculture.
3. At date of writing, the only reliable White Russian seed in sight is that which has been grown in the province. Those wishing this variety should try to buy from local sources.
4. Only limited suppplies of guaranteed Red Fife are as yet in sight. If you can buy locally, do so.
5. It is likely, as the trade appears that the bulk of the imported seed must be Marquis. This is now the standard wheat of the west and while it has not given universal satisfaction in Nova Scotia we have records from growers in Victoria, Pictou, Colchester and Kings Counties who have grown it several years and consider it the best.
6. Be sure to treat your seed with Formalin to prevent smut.
7. Fertilizer suplies are scarce and transportation uncertain. Buy now.

REPORT OF THE N. S. F. A. REPRESENTATIVES ON EXHIBITION COMMISSION FOR THE YEAR 1917

To the Officers and Members of the Nova Scotia Provincial Farmers' Association:

Your representatives on the Board of Commissioners of the Provincial Exhibition submit the following report:

The year 1917 has been marked as a year of very unusual experiences in regard to the Exhibition.

We entered on the year with what we considered bright prospects not only for 1917 but for many years to come. All interest seemed to realize as never before the importance of the Exhibition particularly in rgard to Agriculture and the importance of agriculture in regard to the welfare of the country in general especially in regard to the successful prosecution of the war. All the members worked in harmony; we also had the co-operation and assistance of the Halifax Board of Trade to a greater degree than ever before. The financial situation looked better than it had for some years, consequent on arrangements with the City and Government. We were acquiring more porperty with a view to rearangement of the buildings in the near future on plans to insure better accomodation and less crowding and improved conditions in all respects. These plans have received a set-back for the present on occount of the disaster to Halifax in which the Exhibition received its share of loss, all the buildings having been completely destroyed, but we are thankful that there has been on loss of life with our staff there. Manager Hall, although seriously injured, we are pleased to note is fast recovering and likely to be in his usual health in a short time. The Exhibition with the rest of the Halifax interests is bound to feel the effect of the disaster for some time, but we believe that we have good reason to feel assured that the Provincial Exhibition has a bright future before it, and recommend that every interest should be shown and every energy exerted to have it reopened under the best conditions and at th earliest possible datet.

As for the Exhibition in 1917, war conditions and consequent scarcity of farm help worked against us, but a more serious disadvantage than that was the unusual late spring and dry summer. These made it look discouraging, but when the Exhibition came on, we were pleased to find that the exhibitors had responded nobly and the buildings were well filled with exhibits which in most cases excelled in quality those of past years. In the Agricultural and Horticultural Departments this was particularly noticeable and we feel that great credit is due the Exhibitors in the Departments as the season was a most unfavorable one for them.

In the Live Stock Department, there was also a good shownig. In some classes the entries were not as large as they have been some other years, but in most classes the entries were up to the usual mark, and in all classes of live stock including poultry, the quality has never been surpassed in our Provincial Exhibition.

A particularly pleasing feature was the exhibit by the Agricultural College consisting of a number of their best horses and cattle which were on show during the Exhibition but did not come up in competition with privately owned stock.

The visitors showed quite an interest in the exhibit and we hope that the policy may be continued.

All the other departments were well filled with exhibits of the finest quality and were a credit to all concerned.

The racing was never excelled in the Province and was conducted on clean honest lines and proved very interesting to all classes of visitors.

The Midway came in for the usual amount of criticism, some of which may have been justifiable, but much of which, if actual conditions were enquired into would have been much better unsaid. While we make no attempt to uphold everything in connection with the Midway, it does seem strange to us why the Provincial Exhibition should be singled out and so much fuss made regarding the Midway while other Exhibitions and even institutions which claim to be exclusively for the moral and religious benefit of humanity recognize and uphold the same things and are permitted to do so without one word of protest.

The financial statement for 1917 shows:

Expenditures	$42,067.01
Receipts	38,159.99
Expenditures over Receipts	$ 3,907.02

This we consider a good showing especially considering that we had the imsfortune to have to practically rebuild the Grand Stand and put extensive repairs on the buildings and the fences, the result of a heavy wind storm.

In conclusion we wish to thank you one and all for the supoprt we received from you last year and especially those who patronized us as exhibitors, and again let us remind you that now as never before the Provincial Exhibition needs your best efforts.

Sgd. H. S KENNEDY.
H. W. FOSTER.

FARMERS AND DAIRYMEN HAVE INTERESTING PROGRAM

The Annual Meeting of the New Brunswick Farmers and Dairymen's Association, will be held at Fredericton from March 12th to 15th. The program is one of the best that the Association has had in years. The speakers will include men who are at the forefront in matters agricultural. Excursion tickets, one full class fare are obtainable on the Canadian Pacific and Canadian Government railways. The program is as follows:

PROGRAMME

Tuesday, March 12th, 8 p. m. City Hall

Opening Address—By President, Isaac W. Baird.

Address — His Worship Mayor Mitchell.

Reply—Vice-President, R. R. Patchell.

Address—Hon. J.F. Tweeddale, Minister of Agriculture.

Address—Dr. W. G. Keirstead.

Reports of the County Vice-Presidents.

Appointment of Committees.

Wednesday, March 13th, 9.30 a. m.

"Sheep Raising and Co-operative Marketing of Wool."—Thomas Hetherington, B. S. A., Livestock Instructor for N. B.

"Poultry Raising."—A. C. McCulloch B. S. A., Poultry Supt. for N. B.

"Beekeeping."—L. T. Floyd, Apiarist ofr N. B.

Wednesday, March 13th, 1.30 p. m.

"Potato Diseases."—G. C. Cunningham, B. S. A.

"Fertilizer Facts and Fallacies."—B. Leslie Emsalie, Central Experimental Farm, Ottawa.

"Potato Markets."—Guy G. Porter, Perth.

Wednesday, March 13th, 8 p. m.

"Breeding and Feeding Dairy Cat-

(Continued on page 187)

PERFECTION Seed & Grain Separator
(Patented 1901)
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DAIRYING.

MODERN COW TESTING

In venturing to accept your good secretary's kind invitation to address this convention on cow testing for perhaps the tenth consecutive time, I have been somewhat worried to find any legitimate excuse for appearing before you again. Possibly one explanation is the fact that the eyes of the world are today on the dairymen of Ontario, for they are just about as useful as the magnificent boys in the front line of trenches; today cows are appealed to as empire necessities, for our soldiers and babies find milk and butter fat as essential as wheat. Then too, we have the satisfaction of noting that a real endeavour, appears to be in progress, possibly the first honest endeavour, to arrive at the cost of milk, to appreciate it as a food and the great nutritive food value of all cow products. The nation needs every drop of milk that can be produced; it has no substitute.

Every dairyman knows that with fair feed prices and fair labour costs he can make more on milk than he can on beef; the cow is worth three times as much as a milk producer as when turned into meat.

So once again we have tried to dig into a mass of 205,000 individual cow records received at the office during the year, to see if figures talk in dual language, and if they can be translated into any worth-while suggestions for modern work.

May we first remind ourselves of the significance of the intimation that the French government wishes to purchase one million cows from this continent as soon as the blessings of peace are ours once more. The stage is being set for big business, in which cow testing is to play a star role. France will not want poor milkers, but will assuredly want to buy from men who have saved every productive cow, and her promising heifer; remunerative prices will be obtained from these purchasers who will ask for records of milk and fat production.

Does it pay to keep records? At a recent auction sale two herds of equally well bred cows were put up; one lot, with no records, averaged $145.00; the other lot, with records, fetched an average price of $303.00, more than twice as much. This is a second indication that it pays in these modern, busy times to regard cow testing not as a mere unimportant incident, but part and parcel of one's main occupation.

Arising from that is this thought, a man here and there may be overstocked, others need more; might there not be established on this as on the other side of the line, dairy cow exchanges, whereby every useful cow could be placed with some farmer who wants her, and so halt the weary procession to the slaughter house? Surely we are scarcely acting wisely when cows giving upwards of eight thousand pounds of milk are being sold for beef.

Closely connected is the exchange of good pure bred dairy sires, advocated so frequently, for it is good modern policy to save not kill them before their real value is known. Just recently $1,000 was offered for a fine prepotent sire whose worth was undiscovered till he was simmered down for beef extrace. Are we not literally and entirely dependent upon that marvellous ingrained feature of heredity in the pure bred, ability to transmit producing quality? One of our recorderers kept track of the performance of daughters of two pure bred sires of the same breed in one small district and found a difference of almost $600 in the value of the butter in one year. Let us save those good sires.

Is the modern dairyman to risk any kind of pure bred sire before time discriminates dairy merit; or worse still, should he use a grade You remember we have an Ontario law against a grade stallion, it is but a step now towards regulating scrub dairy sires. Let us remember we cannot expect improvement from the grade, we rightly demand it from the pure bred. Our recorderers in 35 districts report that out of a total of 5,620 sires in use, 47% are grades, and out of the remaining pure breds, one-third are poor, undesirable. We need more foresight.

We all know that the richly bred sire, presenting finest individuality combined with extreme dairy capacity, a triumph of the Canadian breeder, is worth big money (he can be purchased cooperatively or obtained from the department) when records show that he has forty or fifty daughters that have given over 2,500 pounds of milk in a month, or when mated with grade cows he has far more than doubled their yield of fat in two generations; so, plainly, the modern dairyman can scarcely acord to overlook the importance of this factor as shown by dairy records.

But may we consider more particularly the value of cows as disclosed by a few figures kept on farms. Four mature cows in one herd gave only 2,337 lbs. milk and 78.5 lbs. fat apiece during the year; they are described as "no particular breed, but red in colour." Perhaps these cows had no chance, possibly the owner is not naturally adapted to animal husbandry, he might make a good blacksmith or bricklayer.

Our supremest energies are needed today, we cannot afford to fuss and fritter with the three thousand pound cow. Such owners appear adrift on an ocean of unbelief regarding true values.

But here is a different record, where the owner is injected with a good dose of optimism, ten cows each one giving four times as much milk and fat as the above four, and still better results quite expected.

It appears that the most successful dairymen are those who display most sympathy with cows of fine quality, records indicate a cow's needs and preferences in such matters as care, feed and attention; and the more that these two features of her life—the literal self-sacrifice of a good cow in the breaking down of her actual cell tissue to make milk (as distinguished from the selfish storage instinct of the beef type) and then her wonderful, unceasing, hourly service for humanity—when these are appraised by the true dairyman, who is always of fine quality, then the more eager will both men and cows be, mutally, to do their very best. It is a simple equation, sympathy plus sacrifice equals larger service. Again and again, in support of this, our records indicate that with only slightly increased feed, but with far better care and attention, the yield is increased.

Then we find this kind of thing, two cows in the same herd, same age, fresh the same week, and one giving eighteen or twenty-four hundred pounds of milk more than the other. This lays stress on one main object of record work, useful comparison, power then to distinguish between cows that do not respond to their increased opportunity, and those that are the willing servants of thoughtful owners; to discover those that are the more valuable on account of the human sustenance they furnish in excess of what only an average cow does; for that bit extra, that additional weight, that plus quantity, voluntarily given as increase above the normal or expected is of special value. It heaps the measure full of welcome profit; indeed as it is obtained either per acre or per cow it is the distinguishing mark of the good farmer, the modern dairyman, not merely the keeper of cows. The extra feed, the better care frequently have returned twice the original cost. We have several cases where extra feed to the value of only three or four dollars gives additional milk valued at $15.00. A clear cut case at one of our record centres shows that extra feed, more clover and more meal, valued at $605 given to 100 cows, produced over $1670 worth more milk. That is worth noting, it was no gamble, but an investment that paid one hundred and seventy per cent.

When total income from any herd, or any one cow is only at a medium level, unless expenses are remarkably low, the resulting profit cannot be in keeping with the just deserts of the modern dairyman. If a cow's total product of fat is worth seventy dollars and her feed is valued at sixty-five, does the clear five dollars pay? We naturally say that so and so has a "good" business, or that this is a paying investment as the interest or net profit is high. The large turnover, either with matches, mops, or milk does not necessarily mean a paying business, often the growing expenses quickly devour income leaving a bare skeleton of profit. If you prefer to think in large figures you may recall that the newspapers recently stated the G. T. R. in a certain period had four million dollars more as gross receipts, but the net earnings were three million dollars less.

So we find cows in the same herd producing almost identically the same weight of milk and fat but vary in very marked degree in the value of the feed consumed, and on no war time menu either, with the result that in many cases the profit is double.

Manifestly therefore the dairyman of good business instinct is able through dairy record work to select cows that not only bring in good money, but that return a respectable profit above a reasonable charge for expenses. We want the willing cow, but again selected, willing to work profitably herself, not too willing to let others ro it for her.

Great satisfaction from dairy re-

Profits in the Milk Pail
Your cows will milk heavier and produce milk with a higher percentage of butter fat when given
Pratts COW REMEDY
Full milk pails mean more profit for YOU. Richer milk means more cream—more butter—more money in the bank.
Begin right now with PRATTS. It puts your cows in prime condition, makes them relish their feed and digest it fully. Costs but one cent a day per cow, and pays for itself many times over in the extra quantity of milk obtained by its use.
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This concentrate stock tonic, blood purifier and food digester is made from pure ingredients and contains no filler. It aids digestion to such an extent that food which would otherwise be voided and lost is turned into muscle, fat or milk, as the case may be. Try Royal Purple Stock Specific on your poorest, most rundown animal. It will give you surprising results.

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will enable you to fatten a horse very rapidly, because all the nourishment is liberated from the food.
DAIRY COWS give 2 to 5 pounds more milk each daily when fed Royal Purple Stock Specific. It also improves their physical condition.
Mrs. Fred Bush, Wainfleet, Ont., writes us as follows:
"I have tried Royal Purple Stock Specific in feeding cows. Weighed one cow's milk, and find a great gain in ten days' time, also a great improvement in cow's condition. Order Royal Purple from your feedman. It is sold in large and small packages.

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We will gladly send you our 80-page book, describing the common diseases of stock and poultry. It tells how to build poultry houses and feed calves without milk. Write for your copy.

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THE CANADIAN SALT CO, LIMITED 222

cords comes in the avoidance of putting in time working for unprofitable cows, and the enjoyment of more cash and larger profit from selected individuals. It may be that a large income is obtained at too great an expense, we cannot afford to pay too much for income.

Some of the records we receive show big things being done, $200, $250 or more being earned per cow, one group of 180 cows giving a million and a half pounds of milk, bringing fair reward for the owners' investment in feed. But whether all his weary hours of time, his hard labour, his unflagging energy, his superior talent, evidenced in careful thought, wise forethought, and matured planning have been suitable rewarded is quite another question. Especially is that true today when the general public is obtaining a glimmer of light on the question of the time put in gratuitously by farmers and farmerettes, the families of dairymen, their wives and daughters, and how much good brain power it takes to run a dairy farm profitably.

Records indicate great possibilities. Looking at two districts we find that 250 cows in one gave a total yield more than the same number of cows in the other district of 170,206 pounds of milk. Another comparison shows that if 500 cows in one locality had done as well as 500 in another, there would have been an extra yield of 48,-015 pounds of fat. Great savings may be effected and larger incomes assured when dealing with the selected, real dairy cows.

If in modern dairying with experienced men dependent on milk for income we still find differences of $40 and $60 gross revenue between two cows in the same herd, it makes one stop and think. Is it possible to locate exactly just what it is, definitely, that makes two cows that look alike, are alike, as far as practiced, expert eyes can see, act in such radically different fashion at the pail? Is there some hidden principle in the blood? Perhaps a scientist by patient analysis in a laboratory will discover it.

Cow testing is bound to spread because it has the right foundation, the genuine desire to advance the cause of dairying through cooperative united effort; members are working to build a greater and better dairying industry, better farms, better cows, improved farm life. There is imperative need for more and better cows for the welfare of our own and other nations; cow testing will help to select the best and to maintain good herds. Rapid increase is dependent on the hearty cooperation of the individual farmer and everyone who can run a Babcock tester. It cannot be had cheaper than at present, costing the dairyman simply the price of scale, bottles, and dipper, beyond that not one cent, for the Department pays for the testing and does the figuring. In the United States today there are over eleven thousand farmers gladly paying $1.50 per cow for having two hundred and twelve thousand cows tested.

Are we at present on an economically sound basis when we still harbour the poor cow? It has been stated authoritatively that many industries do not realize twenty per cent of their possible capacity; can we "speed up" milk production I firmly believe we can. Canada has a heavy debt; but the wonderful dairy cow, selected, can be relied upon to assist in its liquidation. One might plead to give the cow the best possible opportunity. She may have an inclination to work better than her natural pace. She can work faster without tiring, and if properly trained and given adequate inducement, will adopt the faster pace and make it a habit to work at that faster pace, which may be called the proper pace. This marked individuality and possibility of development in cows of the same breed is well illustrated by the fact that the full brother of a trotting horse, world-famous, is at city work and has no pace better than a walk.

Then, too, the good cow may have ambition, far more than we commonly suspect; she is not like the negro down south, who if normal wages are one dollar per day will work daily for a week, but if wages are two dollars a day, will lay off half the time—he is not ambitious either to accomplish or save. Neither is the cow lazy, either physically or mentally; for all we yet know she may be thinking up better methods. We may rest assured that the cow is not thinking that by doing efficient work she will be displacing other workmen and lowering wages. The point is that she is a most excellent master craftsman and is clearly, logically entitled to the best possible opportunities that skilled, scientific, common sense management can provide. A cow is just a cow, true, but because our senses have been somewhat dullel in time past with low averages, poor yields, there is no necessity to keep our feet on the treadmill of the what-has-been, or refuse them the pleasure of the what-might-be. Development, herd improvement, are giving us yields today that but a few years ago would have been thought impossible. Pick up any dairy paper today and some new record is made; collect such, and it is not hard to find 40 or 50 cows that gave over a thousand pounds of fat each last year. Just consider what a wide door is open for Ontario dairymen, for if the first ten thousand cows you come across were averaged it is doubtful if they would be found to give two hundred pounds of fat.

Note where men are keeping track of weights and tests and you find their cows are head and shoulders above the average yields of the township or county, twenty-five dollars or more per cow. Where records are kept the herd shows improvement, where the farm and the cows have a poor appearance it is probable the owner is not weighing and sampling; but where the scale is used and the record sheet is studied, there, on every such farm, you find the milk yield per cow steadily climbing, four thousand pounds one year soon made six thousand, the one hundred and fifty pounds of fat made into two hundred and fifty; elsewhere you note the yield is up to the eight and nine thousand pound level, or may be the figures are in the fourteen and fifteen thousand pound class (I am quoting actual records) and three and four hundred pounds of fat per cow, with one hundred dollars or more clear profit per cow above feed cost, and a return of two dollars and a quarter for every dollar spent for feed.

Please note this obvious fact, so obvious indeed, that one is apt to overlook it, men are absolutely dependent on figures to substantiate the bare statement that the cows did well, records are the necessary proof that the yield is high. Without the figures one is lost in a mist of uncertainty, but the beacon light of dairy records leadas positively to solid and lasting herd improvement.

Three Important Reasons For Buying a

NEW DE LAVAL

CREAM SEPARATOR

At Once

THERE are three very strong reasons for the immediate purchase of an up-to-date De Laval Cream Separator.

In the first place, a new De LaLval machine will now save its cost in a few months—in more and better cream and butter and in time saving—at the present very high butter prices and great need of every minute of time.

In the second place, the patriotic duty rests upon every producer of butter-fat to save every ounce of it, and nothing is of greater food value to a nation at war. All European countries are encouraging the sale of the best cream separators in every way possible.

In the third place, railway delays are such that you can't depend upon quick delivery, and if you don't order your De Laval now there is no telling when you can get it. Moreover, the supply of labor and material is uncertain and all last year De Laval deliveries were nearly two months behind.

Again, De Laval prices have advanced very little thus far but must go higher if present industrial conditions continue, let alone become more difficult. Present prices hold good until March 1st only.

There was never a time when the immediate purchase of a latest improved De Laval Cream Separator was more important to everyone separating cream, or when it could less wisely be delayed.

See the nearest De Laval agent at once. Arrange to try a new De Laval machine for your own satisfaction. See for yourself just what it will do for you. If you don't know the nearest agent simply address the nearest General Office.

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butter-Workers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

The making of a classification has been said to be the beginning of wisdom. Certainly without it, accurate records are impossible, where there are no records business does not prosper. Records are indispensable insuranace against mistakes, failure of memory and against general human fallability. An ounce of knowledge is worth a pound of guess.

The more that the welfare of the dairy cow is considered, the more important does she become in our estimation. She is working up for humanity's needs, in the most economical way, those natural resources which without her would be valueless. May I remind you how she dove-tails into the very foundations of our well being; for the mental and physical welfare of individual members of society are recognized as dependent largely on three factors, the natural resources, the tools and methods of production available to develop those resources, and the knowledge and organization whereby the fruits of labour may be fairly and equally distributed. All these are embraced by Cow Testing.

May I suggest that we all secure places on the builders' committee of this great Canadian Construction Club, Cow Testing; that we help the doubting Thomas's to kick away their crutches of indecision and join the big class A-1 of stalwart dairymen in their forward movement; for this fact must surely be in the lavendar jar of your remembrance, the successful dairymen everywhere are those who practice modern cow testing.

C. F. WHITLEY.

QUALITY SHORTHORNS

Editor Maritime Farmer:

Having noticed in the last isue of your paper that new regulations are being made regarding exhibiting Shorthorn cows, the suggested change being that cows must have a calf at foot, it occured to me that you might be interested in hearing of what my Dual Purpose cow "Daisy Lodge" has done. She completed her Record of Performance as a four-year-old in October last year, making a total production of 11,638 lbs. of milk, 480 lbs. butterfat in 365 days. Accompanying the Certificate from the Live Stock Commissioner was a letter stating that this cow lead the four-year-old class by a considerable margin.

I now have three Dual Purpose Shorthorns qualified in R. O. P. (each of these animals have made considerably over and above the amount necessary to qualify), and another heifer has been milking for a litte over three months, also entered in R. O. P.

If you are interested in this class of cattle I would like you to come down and have a look at them.—P. R. L. Fairweather.

LIVE STOCK.

THE CARE OF PREGNANT ANIMALS

Periods of pregnancy are unquestionably the most important time in the life of a breeding animal, and the very best attention should be given during such times, for the proper care of the mother animal and the unborn young has a decided effect on the offspring after birth.

During this time the animals are naturally slow and lazy, and it is very important that plenty of exercise be afforded. This should be gentle, regular and of a sufficient amount, but never of a rough or overtaxing nature, as it is very easy to seriously injure a pregnant animal. A considerable amount of a moderate form of exercise is absolutely necessary to enable the animal to properly assimilate sufficient food for its bodily needs and for the development of the unborn young, as well as to enable it to carry on other natural bodily functions such as throwing off waste matter. If these conditions are not brought about the animal's health is seriously impaired by the accumulation of imprities in the body, and as a result the offspring is small, weak, puny, and an easy prey to disease. Lack of care during this time is the most prolific source of loss among livestock in the young being born dead, or so vitally weak that they never develop into animals worth the time, trouble and expense of raising.

On many farms there are mares with foal at this season of the year, and so far the need of better care and feeding has not been so great, but from now on the amount of nourishment the fetus needs will constantly increase, for the most rapid growth is made during the last few months of pregnancy. This is the time to give the best attention to the brood animal's feed. At this time a pregnant mare is literally two animals and must receive food accordingly. Overwork or lack of nourishment during this period is equivalent to starving the calt ofter it is born. Exercise is very essential and if used judiciously pregnant mares can be worked with much benefit to themselves and foal, as well as profit to their owners; but if they are made to do any heavy work the colt naturally suffers from the strain. Entire cessation from work is likely to cause digestive troubles, but remember that a mare heavy with foal should not be forced to do heavy pulling or work of a jerky nature. So long as the work is not overtaxing a mare may be worked moderately to within a month of feeding, without harmful results.

Comfortable Quarters Essential

As the mare increases in size the harness should be adjusted to prevent binding or chafing. Stalls should be large and roomy, preferably of the box type, for in a small or narrow stall a mare may have difficulty in rising, and for this reason she will stand much more than is good for her. All gates and other openings through which pregnant mares or cows pass should be sufficiently wide to prevent pressure, as many cases of serious injury and abortion result from animals passing through narow gates and doorways. It is best not to take any risk at such critical times.

In the matter of feeding there is often a disposition to save on the grain feed, especially if the mare is not working and supply the deficiency with ha yand straw. However, this is an extremely poor policy, as there is so little nutriment and so much indigestible material in such feeds that the animal will have rough, dead looking hair, dull eyes and a general rundown appearance. The fullness of the abdominal cavity at this time makes it necessary to give concentrated feeds instead of so much bulky ones, and because o fthis the mare should be humored. Feeding should be done regularly, three times a day, even when not at work, instead of twice a day ,as is usually the rule with other idle horses. Good bright hay, with oats and bran fed in proper proportion, make an excellent ration. Protein is very essential during the latter part of the gestation period. Oats is very nutritious and bran has a tendency to prevent constipation. The feeder should use his best judgment in feeding.

Exercise for Brood Sows

Brood sows are especially lazy and indisposed to move around during pregnancy but if necessary they should be forced from their beds, particularly in cold weather, and driven about in order that they may get the muchneed exercise. This promotes healthy bodily functions and this is so essential, some means of compelling them to take sufficient exercise the last few wekes before farrowing should be devised. Plenty of exercise is as necessary for the brood sow as a well-balanced ration. A good plan to force this is to have the sleeping quarters in one end of a long, narrow lot and the feed trough in the opposite end, or by having the feed and water in small amounts in various places over the pen.

Hogs suffer more from the extremes of hot, cold or rainy weather than any other class of farm animals, and for this reason brood sows should be provided with good shelter. However, this does not necessarily mean elaborate or expensive equipment. A good shelter is warm, free from dampness, well ventilated and so constructed as to admit plenty of sunshine.

Brood sows should not be housed in dark, filthy quarters or allowed to run around stables and manure piles. And they must not be crowded into close quarters where they are apt to pile up and cause loss of several pigs, if not an entire litter. At present prices for pork and live animals pigs are worth saving.

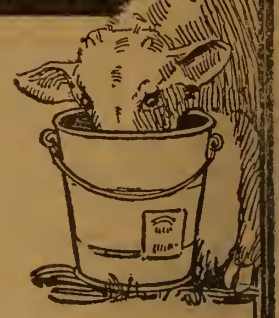
Proper care of the sow during pregnancy pays the highest dividends, and as the value of a brood sow is determined by the number of pigs she raises to weaning time, she should have proper management both before and after farrowing. Immediately before farrowing a sow should be given the same kind of feed she will receive after farowing, which prevents any digestive disturbances due to a sudden change of diet.

A few days before the computed date put the sow in the pen where she is to stay during the time and reduce her feed, and if the ration is properly balanced and of a sufficiently laxative nature she will come to farrowing time in fine condition. In this connection it is well to remember that for several weeks the young pigs are being fed through the mother and any irregularities in her diet or system may seriously affect her young. Too much attention cannot be given to these facts.

Extra Feed Pays

Cows are often subject to rather poor treatment for, through ignorance or a desire for gain, many people reduce the feed of their cows from one-half to two-thirds during the dry period. This is quite a serious mistake, however, for it should be remembered that, at this time, food is needed for a double purpose, just the same as when giving milk. It never pays to stint the feed of any pregnant animals in an effort to economize during a time when they are not actually producing visible results. This is particularly true of milk cows if one expects to get a reasonable flow of milk after calving. A cow that has had her feed reduced for several months before calving will have drawn on her reserve force to keep the feeding of the unborn calf up to normal, consequently she comes to the milking period in a badly run down condition, very often having a milk flow that is not sufficient even for the calf. In such cases the cow proves unprofitable as a milk

The Feed for Hungry Calves



Conserve the milk and help the nation. You do not need to feed milk to your calves if you use Royal Purple Calf Meal. It is a perfect substitute for milk. It is partially cooked, and the pure ingredients are so combined that the meal will not injure or derange the digestive organs of even the youngest calf. If you want rapid development and healthy calves, feed

Royal Purple Calf Meal

Let the following unsolicited testimonial letters convince you of the sterling qualities of our calf meal.

John D. Hamilton, Port Hope, Ont., writes:
"I have used Royal Purple Calf Meal and find it perfectly satisfactory, and I am recommending to my friends. I might add that I find no trouble with the calves scouring while using this meal. I have tried many other Calf meals, but never found one that proved satisfactory until I got Royal Purple."

S. M. Osborne, Maxwell, Ont., writes:
"We have a pretty good calf which is now four months old and weighs 400 lbs. I think your calf meal is fine. I have never fed anything that will make a calf grow as fast as this meal."

Order Royal Purple from your feedman. It is sold in 25, 50 and 100-lb. bags.

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FREE BOOK
Send for our 80-page book which tells how to raise calves without milk. It also describes fully the common diseases of stock and poultry.

48

A WARNING!
To "Victory Bond" Owners

DO not under any consideration part with your Victory Bonds at less than their market value. They are one of the premier securities of the world. The security behind them consists of every square inch of territory, every railway, factory, every farm and building—everything in Canada from coast to coast.

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To the Secretary of the Montreal Stock Exchange
Room 532, Montreal Stock Exchange Building, Montreal.
Without obligation, please send me your Book on Investing, also information regarding the market value for Victory Bonds.

Name .....

Address .....

producer due simply to poor management, but the owner, thinking she has passed her useful stage, disposes of her at once. It is hardly necessary to state that the cow should be given a fair chance.

All pregnant animals should be given a diet that is nourishing, not too bulky and easily digesetd. Fat has a decided tendency to make an animal whether idle or working, sluggish and inactive, something that must be avoided during prenancy. The condition of the bowels should be closely watched as they are easily deranged at this time, and any disturbance is dangerous and may prove fatal. It is very essential to the health of both the mother and the young that all organs of the body properly perform their functions, and when out of order they should be corrected at once. If some of these precautions were taken there would be less loss in livestock.

Kindness in caring for all stock is a factor that results in profit, and animals that are always gently handled come to regard the one who cares for them as a friend, and his presence does not excite or frighten them. This is very valuable when the young things are being born and asistance is necessary. If animals have learned from past care to regard the attendant with fear the mother instinct will prompt them to resent any attention from him. When animals trust their attendant his presence may save many of the young things that would otherwise perish. Sheep are very easily excited and gentleness is especially valuable in handling them. Sudden fright causes sheep to rush together, very often causing serious injury. Pregnant animals of all kinds should be kept apart from other stock to prevent injury from kicking, crowding or being stepped on.

THE FEEDING OF CALVES

(Experimental Farms Note.)

Give a calf an extra good start the first six months of its life and doing so cheaply, is the secret of successful and economical stock raising.

No matter how good the calf at birth, it will be handled at a loss, or more or less serious handicapped for future usefulness and profit if not fed carefully and cheaply in its early days.

The present high prices of milk practically exclude this product being used to any extent in calf rearing, although it is absolutely necessary for the first three or four weeks if the best results are to be obtained. To discover the best substitutes for whole milk and the best methods and practices in calf feeding, a large number of experiments have during the past three years been conducted on the Dominion Experimental Farms. The detailed results of this work will be published in th enear future. However, a few deductions from these experiments are given herewith.

I. It is more profitable to breed and rear good young stock to maturity than to purchase the average cows for sale, which are usually the animals least profitable and desirable in the neighbors herd.

II. The cheapest way of building up a good herd is to raise it. The feed costs of good rearing in Canada range from $16.00 to $24.30 for 6 months calves, $24.00 to $45.00 for 12 months calves and $37.00 to $74.30 for 24 months heifers, the variation depending on methods of feeding, feeds available and market values of these feeds.

III. Calves of poor type and breeding are not worth rearing, but good calves properly bred will be worth at least 30% and up to 100% more than their feed cost at two years of age.

IV. Calves of good size, strong constitution and large capacity will, on the same feed, make greater growth and better gains than small, weak, narrow individuals.

V. Good rearing of calves is most profitable as shown in such results as,

Earlier maturity in size.

Earlier maturity in profitable production.

Greater production throughout the whole life time.

More valuable and in greater demand at the highest price.

Healthier stock.

More durable animals.

Better able to consume most profitably all cheap farm grown roughages and convert these into milk.

VI. The calf reared on its dam costs 25 to 50% more than the pail-fed calf, and the more productive the cow the greater will be the charges against the calf.

VII. Pail-fed calves reared to 6 to 8 months largely on whole milk, make gains which cost $14.00 to $18.75 per cwt., which is several times the cost when a properly fed substitute for whole milk is used.

VIII. Skim-milk fed sweet at a temperature of about 90 degrees Fahr. is the best single substitute for whole milk, and may reach a value of 70 cents per cwt. or more in feeding young calves. However, skim-milk may be improved by the addition of a good cream substitute such as flaxseed jelly, oatmeal or a well-balanced calf meal.

IX. Buttermilk, if fed uniformly as to acidity and temperature, may have a slightly greater value than skim-milk. Great caution must, however be taken to start calves at a greater age and very gradually.

X. In feeding calves to 6 to 8 months of age on rations composed largely of skim-milk or buttermilk and a good cream substitute, gains may be made at a cost of feed amounting to from $2.00 to $7.15 per cwt., this amount varying with the character and price of meal and the ruggedness and thrift of the calves.

XI. If well started on mothers milk calves may be well reared on calf meals without whole or skim-milk. However, greater care and attention must be paid to these calves, and even so, gains cost from $5.00 to $15.41 per cwt. or nearly double the cost where some skim-milk is used.

XII. There are many excellent calf meals on the market in Canada. The Canadian manufactured meals are as good as and generally decidedly superior to imported meals, due not only to the palatability o fthe ingredients and the chemical balance, but even more to the freshness and freedom from mustiness.

Of the Canadian made calf meals used the three which in total gains have given excellent satisfaction are Royal Purple, Gold Dollar and Caldwell's.

Providing the necesary ingredients are available, it may often be more econonmical for the feeder to mix his own calf meals. If properly done, the resulting gains in weight of the calves may be nearly as great, and often at a much reduced cost.

XIII. In order to rear the best and cheapest cows, all pail-fed calves should be taught to eat, at an early age, cheap and nutritious farm-grown roughages and grains. The best roughages are grass, fine alfalfa or clover hay, swede turnip, mangles and ensilage. Of the grains, oats and barley are unexcelled.

To Have Better Calves

1. Give suitable feeds and avoid overfeeding.

II. Feed regularly and carefully.

III. Keep calf pens clean and freshly bedded.

IV. Avoid in every possible way all such infectious diseases as scours, tuberculosis, black leg and abortion.

V. Destroy parasites such as lice, worms and ringworms.

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MONTREAL PETERBORO WINNIPEG VANCOUVER

A MARITIME BREEDERS PERSONAL EXPERIENCE WITH THE BROOD SOW

Editor the Maritime Farmer:

Owing to the war causing such a great shortage in food stuffs and there being so much importance laid on greater pork production, as the pig probably matures much quicker and with cheaper foods than other classes of live stock, therefore increasing the food supply at once, I feel it my duty to tell others of our experience.

You must be kind and gentle with the sow at all times. Step in the pen often when feeding or cleaning out and pet her.

Do not have her fat. Some writers will say not too fat, but from life experience I repeat, do not have her fat; it causes three quarters the trouble at farrowing time. On the other hand do not starve her so that she is in a run down condition at any time. See that she is not shut up in an 8 x 10 ft. pen and that she has plenty of exercise. The manure shed is a grand place for her in the day time; if you have not that, let her out in the barn yard when the other stock is in the stables.

Before and after the sow is bred we feed the following: In morning about ½ bus. of roots or damaged potatoes and dirt from root cellar floor with 2 or 3quarts dry chop or middlings. At noon an ordinary sized pail full of warm slops and refuse from the house. At night 3quarts oats and 3 quarts bran dry. I may here add that our sows with about this feeding are always in good growthy condition.

You should know the date she was bred so as to know very near the day of farrowing. A couple of days before due to farrow slack off the feed and when she starts making her bed, which is from 12 to 24 hours before farrowing, feed her only half her usual feed and that well scalded and sloppy (no dry feed), continue this for about two days after farrowing.

When she starts to make her bed take all wet or damp bedding away and give her short or cut straw, preferably oat chaff, as this lessens the danger of the young pigs getting fast in the bedding and the sow trampling or laying on them. Just give her enough bedding to keep her dry underneath, as when she has a large amount of bed there is great danger of the youing getting jammed.

Have her pen and bed well warmed if farrowing in cold weather. I always like to be on hand when farrowing and if the sow is restless or the weather cold, I take the young from her as they arrive and put them in a box alongside of a stove or in a good warm place. Then as soon as she is through I takethe young and let them feed and if the sow is quiet let them stay with her.

If she is not quiet I take them away from her and let her feed them every two hours until she quiets down and they get strong enough to take care of themselves.—Breeders.

THE HORSE

CHILLS, COLDS, AND CATARRH.

Treatment

Having got the horse dry and bandaged and rugged, have a bran and linseed mash prepared with a few oats and three or four tablespoonfuls of treacle. Offer some chilled water now, and then, after the horse has drunk or refused it, give a fever drench. And here let me observe that not one groom or carter in ten, unless previously instructed, gives a drench correctly. First get a piece of wide, strong webbing about 14 or 15 inches long, and make a loop of it around a spade handle, or inserted in a 5-ft. stout stick at the top through a hole. Get a box to stand upon, put a hempen halter on the horse, very loosely secured with a knot in the nose-band —i.e., room to open upper jaw. Turn the horse round from the manger, place loop over the upper jaw behind the incisor teeth, then place the loose end of the halter and the stick carrying the loop in the hands of an attendant, and then elevate the head. The giver of the drench, standing on the off side, having poured it into a drench tin, or an empty champagne pint bottle wrapped round with a cloth, in case of breakage, gives slowly in small quantities, dropping the head if coughing occurs. Have plenty of patience; it is not easy for the animal to swallow in such an unnatural position. If he holds the drink, tickle the roof of the mouth with the finger. Do not pinch the throat, do not shout, but be gentle. Do not use a stable fork to lift the head. If there is going to be a gymnastic exhibition a fork is a very dangerous instrument for all concerned.

Composition of Fever Drench

This is for a horse of about 15.2 hands; there-fourths suffice for a horse under that height, and one and a quarter for a horse of 17 hands:—Sweet spirit of nitre, 1¼ oz.; tincture of aconite, 40 drops; solution of acetate of amomnia, 2 oz; spirit of camphor, ½ oz.; water to 10 oz. The same to be repeated in four hours time, and afterwards, for a day or two, one might and morning. Should the attack be scotched and not killed, and a cough develop, stop the drenches and give one of the following powders three times daily, made into a paste with honey or treacle, and plastered on tongue and between back teeth with a flat piece of wood or shallow spoon:—Powdered belladonna leaves, ½ oz.; powdered aniseed, ½ oz.; powdered chloride of ammonium, 2 drachms; powdered liquorice root, ½ oz. If the throat is sore, paint between the jowl and along the windpipe the following application:—Methylated belladonna liniment, 2 oz.; methylated soap liniment, 1 oz.; do this three times daily. If there is much discharge from the nostrils, steam the head with a nosebag containing hay over which boiling water has been poured, or a mixture of hay seeds or bran, of course taking care that it is cooled sufficiently for the point of the human elbow, say, to bear it without discomfort. On the contents of the bag sprinkle a mixture of one tablespoonful of turpentine and one tablespoonful of friar's balsam. All this can be renewed and applied night and morning.

Diet

This should consist of a very little hay, and that preferably chaffed and damped, sloppy bran and linseed mashes offered in a pail (not put into a manger, as portions not eaten go sour, and the horse turns away, whereas a pail can be easily cleansed and uneaten portions emptied away). If in season give a little green meat; if in winter a few crushed carrots.

General Remarks.

The horse should be put into a roomy, loose, airy box, away from other horses, if it is a case of contagious catarrh, as otherwise there is a risk of it running through the stables. Groom slightly every day, uncovering only half of the body at a time. Renew the bandages first, hand-rubbing the legs, and reapply the bandages warmed and not too tight. Do not use mustard either on the throat or sides; it is the cause of many a sub-maxillary abscess. It is a valuable remedy, but frightfully abused. If the breathing is difficult and painful, get one tablespoonful of turpentine and two tablespoonfuls of vinegar, and beat it up, the first with an egg; add half a pint of water slowly, and then add the vinegar. Rub this well in both sides of chest, then rug up with a blanket wrung out in hot water and covered with dry rugs. This with a fever drench will put the animal in a sweat and possibly prevent lung trouble. After three or four hours, when the rug is removed, rub in over the skin about a gill of methylated spirit to close the pores and prevent a secondary chill, then dry rug once more. On no account, however pressing the need of his services, should a horse be worked if his temperature is above the normal.

Never give any form of aloes, however small, to a horse showing any signs of a cold or cough, as if there is an epizootic in the neighbourhood of colds, strangles, or influenza, the effect is frequently disastrous. The linseed mashes and bran and treacle will operate in time as a laxative, especially if helped with a clyster of warm soap and water.

In the majority of cases, if no complications arise (and the above treatment is preventive of same), two or three days will put animal right; but for the first few days work gently, take precautions, and give a little tonic medicine for a week or two in the form of a powder of this type night and morning, sprinkled over food:—Powdered sulphate of iron, 1 drachm; sulphate of quinine, 15 grains; powdered loaf sugar, 2 oz. This will make one powder; twelve to be prepared. SOUTHERN VET.

CAUSES OF STERILITY IN MARES

Shy breeders among mares occasionally create some concern. It is claimed, with some evidence to support the contention, that the higher the breed in the scale of purity, the more irregularly does the animal produce its young, and that mares leading a natural life are more certain foal-getters than those fed and housed under artificial conditions. Darwin points out that "any sort of change in the habits of life of an animal, provided it be great enough, tends in some way to affect the power of reproduction." In countries where housing and stall feeding are practised this may, to a certain extent, attain in horse-breeding, but in Australia, owing to constant and abundant sunlight, even temperatures, excellent natural pasturage, and open spaces, we have advantages that induce sexual fertility and lessen the percentage of barren mares. This is not necessarily a constant factor, however, for the droughts by which we occasionally are visited, with their attendant deficiency of succulent feed, bring about a shortage of foals. It is also claimed that irregular breeding in mares runs in certain lines of blood. Marshall states:—

"It is well known that the fertility of animals which are much inbred is often reduced, but it is by no means invariably the case. Thoroughbred horses are often inbred, and it is interesting to note that in one of the earlier reports of the Royal Commission on Horse Breeding in England it is shown that no less than 40 per cent. of the thoroughbred mares in the country fail to have foals each year. This relatively large amount of sterility is probably due to a variety of causes, and not entirely owing to the results of inbreeding."

It is pointed out by Ewart that mares abort most freely from the sixth to ninth week after conception, but it is most difficult to ascertain how many cases of failure to foal are due to this trouble.

Insufficient Diet.

In animals which, as a general rule, breed freely in a state of domestication or under confinement, it is probable that nutrition plays the chief part (though by no means the sole part) in regulating the capacity to produce offspring. That an insufficient or marked abnormal diet must affect sexual power is almost self-evident. An excessive diet, tending towards producing a fatty condition, is likewise prejudicial to the proper discharge of the reproductive functions. As example of the way in which overfeeding results in a condition of sterility, the barren Shire mares which, in recent years, have been a striking feature at agricultural shows in England may be quoted. Definite vgures are not available to show to what extent mares are sterile, especially during droughts, but those made available by the Horse Breeding Commission in England may be quoted to illustrate the position. This Commission controlled the expenditure of £40,000 per annum for the King's Premiums in the breeding of light horses. During the six years 1900 to 1905 inclusive 9.230 mares were mated with the King's Premium stallions, and during that time the highest percentage of foals was fifty-nine, which was reached in 1903 and in 1905. The lowest percentage of foals was in 1900, when is fell as low as 52 per cent.

Defects in the Sires

It has to be remembered, however, that the failure to produce a high percentage may be due to defects in the sires, In round numbers, in the six years under review, there were close upon 5,000 foals by Premium stallions, or a fraction over over 54 per cent. In the year 1905 we find the percentage of the foals ranging from 33 per cent. credited to the sire Sunborne, to 88 per cent. credited to the sire Battlement. Twelve of the twenty-eight Premium stallions left from 65 to 88 per cent. of foals. In the service season of 1911 fifty King's Premium stallions served 3,245 mares, an average of 65 mares per stallion. Of the 3,245 service fees paid eighty were in respect of trials, and out of the 3,165

Dr. J. Woodbury's Horse Liniment

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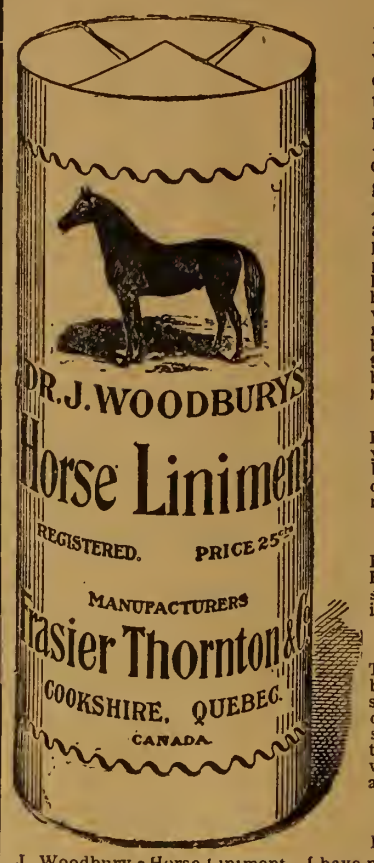

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Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We bave used it in the woods for coughs, colds, distemper and cuts and would say tbat no lumberman sbould be without it.
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Dear Sirs:—I bave used Dr J. Woodbury's Horse Liniment in my stable for years and consider it the best liniment on the market for both internal and external use.
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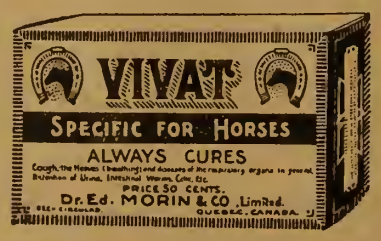

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mares actually covered no information could be obtained of the results of the service of 245. The particulars of foaling for the remaining 2,929 mares show that 1,567 foals were dropped, giving an average percentage of foaling of 53.66. From this series of figures we may summarise the results as "one foal to two mares served." In Australia it is considered a fair average if 60 per cent. of foals are dropped amongst draughts. Some information may be derived from the records kept at the Hawkesbury Agricultural College, showing the services and foal results each year. The mares were mated each year with sires selected from those available in the district, and in seven years the percentage of foals was 58.6.

To the mare is attributed the power of impressing her foal with vigour to the internal organisation, such as the functions of digestion, breeding, endurance, disposition, and constitution. In the case of a draught mare, ability to throw a good foal depends largely upon breeding, management, feeding and soundness.

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London Vet. Correspondence School Dept. 47 London, Ontario, Can.

Various are the tricks the unscrupulous horse trader has in his bag for the discomfiture of the unwary. For example, there is the hiding of spavins, side bones and ringbones. These unsoundnesses may be covered up by bruising or burning the parts, producing a temporary inflammation that may seem quite innocent to the buyer until it disappears a few days later.

Many a man has bought a horse thinking him to be free of all vices later to find him to be a cribber. Cribbing in its natural state is caused by stomach trouble. There are, however, many cases of cribbing caused by imitation. To temporarily stop a horse from cribbing a horse trader will either saw between the teeth, cut the gums or drive wedges between the teeth. This will make the mouth tender and there will be no cribbing while such a condition lasts.

Show-ring men put ginger into the low biwel or they will moisten the anus with some irritant. This will make the horse carry his tail high and act very full of life. Suspicion a horse that carries his tail high and is very full of 'pep'.

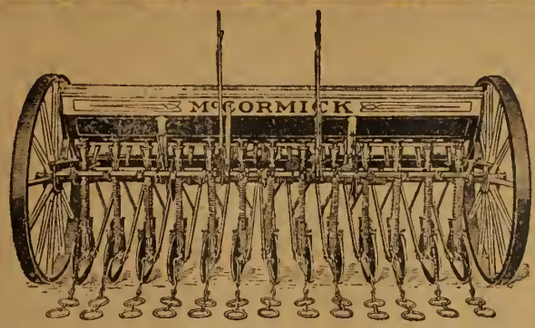
Heavey horses are passed off every day for being sound of wind. A horse with the heaves can breathe easier when the stomach is empty. The feed of a heavey horse is moistened with linseed oil or with arsenic, lobelia, etc. See the animal watered and fed, then run him up a hill or on a heavy road. You will readily detect heaves if present.

A dishonest horseman will sell a sweenied horse and sell him as sound. This he will do by blowing air into the sweeney. This will hide the emaciated part and pass the ordinary eye of inspection. Feel the shoulder over with the hands.

A switcher is more commonly known as a "line grabber." There are many horses that will switch to get the line undtr the tail and then become unmanageable. A crooked horse dealer will paralyze the tail by hanging a weight to the tail or tying the tail over the back for a couple of hours. This will make the tail hang like a rag. Be very slow in buying a horse that has many scars over his body unless you know why the scars are present.

LYMPHANGITIS

C. D. O. has a horse that swells in the hind legs while standing in the stable. He also has a mare that has heaves, and a cow whose cream does not turn into butter as soon as it should do. 1. Mix four ounces each of sulphate of iron and nitrate of potassium and divide into 24 doses. Give one twice a day in bran mash and repeat the above quantity if needed, also hand rub and bandage the legs while the animal is in the stable. Give regular exercise. 2. There is no cure for heaves. 3. Try heating the cream to about 65 degrees before churning.



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BECAUSE drill-planted seed gets an earlier, more even start — because drill planting saves seed and produces a better grade of grain — because drill planting saves time and work — and because the **McCormick** drill is one from which you get all these advantages, buy a **McCormick** drill.

The **McCormick** comes in single disk and hoe styles, 11 and 13 marker sizes. All have the famous double-run feed which handles accurately both large grain and small, from peas and beans down to flax, planting any desired quantity per acre, planting it evenly, and covering it to just the right depth. Your crop could not get a better start than the one given to it by a **McCormick** drill.

See the **McCormick** local dealer when you are ready to buy. He will show you all the details of construction that put the **McCormick** drill at the head of its class. Or, if you write the nearest branch house below, we will send you full information.

International Harvester Company of Canada, Limited

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WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

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Absolute Security

WHEN you go away for a day or turn in for the night, *you are certain* your stock is locked in—they can't get over, under or through the spaces—a perfect fence for hilly or uneven ground, through streams; protects poultry, ducks, geese, sheep and hogs. Can't sag or break down and will turn an unruly horse

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is made of best heavy Open Hearth steel fence wire, the impurities burned out and all the strength and toughness left in. Makes the fence elastic and springy. It will not snap or break under sudden shocks or quick atmospheric changes. Our method of galvanizing prevents rust and the coating will not flake, peel or chip off. Every intersection is securely clamped with the famous Peerless Lock.

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POULTRY.

SPROUTED OATS—A YEAR-AROUND GREEN FOOD FOR POULTRY.

Green food, so called, has long been recognized as a necessary food for all of our domesticated animals, both beast and bird. Necessity brought to life the principles of the silo, and the dairyman's brains brought it to its present state of efficiency. Where in this great country is the successful dairy farm without its silo, whether large or small? There is none. This question will soon be asked of the foultry farms and their grain sprouters, and the answer will be the same.

The grain sprouter is as much a part of the permanent equipment of a successful poultry farm, as are the birds themselves. Why? Because it produces, with the least cost and labor, the best green food—sprouted oats—in the natural state, every day in the year.

We have proved to our own satisfaction that sprouted oats make the best and cheapest all round poultry feed. They are a natural tonic and regulator and keep birds in perfect physical condition. They increase egg production without injury to the laying hen, strengthen the fertility of the hatching eggs, develop fast growth in young stock and cut the feed bill in half. Therefore, in our opinion, sprouted oats are necessary every day in the year; and it is a very easy and simple matter to secure them. A comparatively few years ago the agricultural colleges commenced advocating the use of several green goods, such as beets, lettuce, cabbage, potatoes, steamed alfalfa and clover, etc. But all this meant land, labor cost of cultivating and lastly a root cellar for winter use, with often frozen or decayed green stuff before spring; and the whole process ate into the egg profit to such an extent that the question was often asked—is it worth all the cost and trouble? Judging from our own experience, it was not. As practical poultrymen we were compelled to turn our attention to the sprouting of grains.

Having heard a few years ago of sprouting oats in boxes, we tried it and found that the oats on top would sometimes sprout an inch or so, while those on the bottom never had a chance and often would become mouldy and decay. At best they never sprouted and were a dead loss. Next we tried both wood and concrete floors with equally poor results. There was nothing sure about the oats sprouting and unquestionably they took too long—from seven to ten days—to grow about three inches. Also the sprouts were coarse and tough, while invariably a certain number of the oats failed to grow at all.

As a further experiment we tried a long wooden table in a heated cellar, but the results were far from satisfactory. It required too much time for the grain to grow, and frequently the developed sprouts grew mouldy and decayed. It often happened that a little too much water drowned them, or because of insufficient moisture they became overheated and ruined. At this rate there were days when the birds had no grain at all, and under the most favorable conditions the labor in turning and mixing the oats was very great, so we gave up in disgust and directed our experiments into other channels.

We bought advertised grain sprouters of all knids, some at exhorbitant prices, and used them according to directions, only to spoil more oats. A few of the machines worked quite well under certain conditions, but we wanted one that would work under all conditions, without a chance of mould and decay—a machine that anyone could handle, requiring a slight amount of work, and one that would grow a crisp, snappy, tender, yellow sprout in the shortest possible time, so we continued our experiments.

The sprouting of oats is divided into three distinct stages: first, soaking; second, germinating; third, sprouting, and the great majority of oats is spoiled in the sprouting, because the operator does not appreciate the difference between the second and third stages.

If germination is carried too far, the oats become mouldy and decay, and from experience I place the dividing point between germination and sprouting when the sprouts average about a quarter of an inch in length. Up to this point, after soaking, the oats should be kept packed in boxes or barrels and well covered with burlap bagging. They need no light now, nor at any time, neither do they require ventilation to speak of during this stage. During the germinating period, however, which lasts from two to four days, one must be cacful how the oats are watered. Keep them damp, using luke warm water twice daily. Too much water will drown them, and too little will allow them to scorch. Either fault means decay. With very little practice one can soon learn by the sense of touch how to water oats during germination. They should feel warm when the hand is passed through them. If two warm, they have not been watered enough, and if not warm enough they have been wet too much. During germination they should be thoroughly mixed morning and night, and the easiest and quickest way is to dump them from one receptacle into another. I would advise watering first and then stirring or mixing. As germinating oats need a certain amount of artificial heat. I would advise keeping these boxes, when in use, in the cellar or kitchen, by the furnace or stove or in other warm location.

After germinating sufficiently the oats are ready for the sprouting trays. Here we have an entirely different process. Whereas, in germinating, oats need confinement, little if any ventilation and a small amount of heat and moisture, in sprouting they need good ventilation, all the heat they can stand, plenty of moisture and no mixing or stirring. Root ventilation is the secret of al plant growth, therefore use wire bottom trays with as large mesh as possible, but small enough to hold the growing grain, and because they need ventilation, they must be spread out not over half an inch thick. If thicker than this some are smothered and fail to grow properly. Do not disturb them while sprouting in any way until ready to use as feed. If the sprouting machine is properly ventilated, no amount of moisture will harm the growing grain, and they must be kept well watered to insure the maximum growth. The temperature should be kept as high as possible, with care to avoid scorching the roots of the youngest most tender sprouts by too much heat.

Another most important point is light. Do not have it. Keep the oats growing in the dark and they will be tender and juicy to the tip. Light means green food and green food means tough food; and the only thing the light does to growing grain is to toughen it.

Our method for sprouting oats is to soak them for twelve hours in luke warm water, a quart and a half of dry seed oats for every hundred birds. Then drain the water off and pack the oats in what we call a germinating box, to the depth of at least four inches, the deeper the better. Every twelve hours we sprinkle slightly with luke warm water and stir by pouring the oats into another box. This is repeated until the sprouts average about one-quarter of an inch in length, when they are spread out on sprouting trays about half an inch in depth, and placed in the sprouter and watered thoroughly at least twice daily. Trays are one inch deep. By using the oats as feed after sprouting four days (when they average six inches and more in height), we have cut the feed bill considerably, increased egg production and kept the birds healthy. I might add that oats are fed every day in the year to all our stock and it pays well. Grown in this way the sprouts will be tender and juicy to the tip, mould is impossible and the oats cannot decay, drown or burn up. It seems hardly necessary to add, that we use only the very best quality of seed oats for sprouting.

HATCH THEM ALL!

A good strong chick from every hatchable egg is what you should demand of your incubator. That's what you are entitled to and that's what you get when you use a Buckeye.

It is built up to a standard — not down to a price. Twenty-five years of development have established the Buckeye as correct in principle and exact in operation. There is no guess work or gambling with valuable eggs and more valuable time. Every machine is sold under this sweeping Guaranty:

The BUCKEYE is guaranteed to hatch more chicks and stronger chicks than any other incubator; to operate satisfactorily in any temperature down to freezing; to require no artificial moisture and no attention to the regulator from the time the hatch is started until it is finished.

Perfect mechanical construction is also guaranteed. Any Buckeye or part thereof that does not fulfill our guaranty will be replaced any time within 40 days.

Used by more than half a million breeders, big and little, it gives universal satisfaction. Our guaranty goes with the first hatch. Beginners with the Buckeye stay in the business because it pays. They grow big by adding more Buckeyes. That is the greatest cause of our tremendous growth of sales.

Stop Your Brooder Losses

Raise all those good chicks. You needn't lose one if you employ the brooder that is scientifically designed and built to do the work. The Standard Colony Brooder has no rival. It stands alone. Makes three chicks grow where one grew before. Cuts installation and operating cost to less than half —labor to less than a fourth. Burns hard or soft coal. Fire lasts twenty-four hours from one filling. Completely self-regulating.

There is nothing to it but a smooth cast iron stove, a galvanized steel hover and the regulating apparatus. Easy to clean and keep sanitary. No wooden walls or curtains to harbor vermin and dirt. No corners where chicks can be crushed.

Write Your Own Guarantee

Write down what you want a brooder to do for you. We'll sign it, and will send your money back without argument if your Standard does not fulfill your guaranty.

Buckeye Incubators and Standard Colony Brooders are endorsed by all Agricultural Colleges and Experiment Stations. Sold by over 6000 dealers. Your dealer will be glad to show them in operation.

Write for Buckeye catalog. It contains the most wonderful testimonials of success in poultry raising you ever read, from Buckeye and Standard users.

The Buckeye Incubator Company
126 Euclid Ave. Springfield, Ohio
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FREDERICTON, N. B., POULTRY SHOW—1918

One of the most succesful Poultry Shows of recent years was pulled off at Frederciton, January 1st to 3rd, by the York and Sunbury Poultry & Pet Stock Asociation.

The show was made up entirely of the Utility varieties. There was an almost entire absence of the strictly fancy.

The New Brunswick Department of Agriculture is offering encouragement only to the useful farm varieties of Utility poultry.

Although the weather was cold and the Show a local one and confined to

the popular varieties, there was a total of 600 birds cooped. The notable and pleasing feature o fthe Show was the improvement of quality in the stock, but the most noticeable and conspicuous improvement was the better fitting and conditioning of the exhibits. There were a few strings of birds laid down in faultless condition, —they were a delight to the Judge's eye and it was a pleasure to handle them.

This Association is fortunate in having a splendid management, the officers are workers and pull well together. Too much credit cannot be given the Secretary, Murray Hagerman. and the Superintendent, Jas, Stickles, in the way they handled and staged the show.

Thc awards were placed by Seth Jones, assisted by A. C. McCullogh, the new Poultry Superintendent for New Brunswick. The awards seemed to give satisfaction, as not one complaint was heard.

Barred Rocks—A large class, but this is the one class of all popular classes that lacked quality. There was only one bird in the class that deserved special mention and that was first pullet, and she was in a class all by herself.

Wyandottes.—White—This was the banner class of the Show in quality, besides it was the largest, both in open class and in pens. 1st. Ideal type, good head, breast, back and tail, but falls a little out in color. 2. Another good one, but not so good in type or as massive. 3. Whitest in class but failed very much in breast shape. Hens. 1. A good one, laid down in perfect fit. She also won special best hen in Show. 2 and 3 were also good ones, well up. Cockerel. 1. Very nice type, good all over, a real Wyandotte. 2 and 3 very close up. This was one of the largest and closest sections in Show. Pullet. 1. A nice one of splendid type, good color. 2. Close runner up. 3, 4 and 5. All in the running, but lost to 1 and 2 in type. Buff. A small but a good quality. Class 1 Cockerel and 1 Pullet very nice. Silvers—a little disappointing for this popular variety in New Brunswick.

Rhode Island Reds—Second largest class in the Show, with plenty of quality—in the S. C. Class. Cockerel. 1. Good color, a warm red with rich under color, free from smut. 2. Too dense in surface color, lacked sheen and finest, but very strong in under color. 3. Fair Hens. The hen class did not compare with cocks in puality. Cockerels. 16 in Class. 1. A reall good one, stood out from his class. 2, 3, 4 and 5 all nice in color and style. Pullets. 1 and 2 very close. 1 wins on even color,—the other winners very good.

Leghorns.—S. C. C. White. Right up in numbers with White Wyandottes and R. I. Reds and with equal puality in three varieties. In these three varieties were the big interest and keen competition. Cock. 1. A crackerjack, without doubt one of the best cocks in Eastern Canada. He went to the best male in the Show for a special. 2 and 3 good type and nice quality. Hens. 1. Good color and shape, her only out was comb. 2. A very neat and stylish rbird. 3. Good but short on legs. Cockerel. A big class. 1. A dandy, only real fault weak in leg color, but in shape, head and color of plumage hard to excel. 2. Good type of body and tail carriage, but failed in comb and did not stand on legs long enough to make him stylish. 3. A nice one, in fact several good ones had to be left out. Pullet. A very nice lot. 1. An easy winner, grand in head, shape and well spread tail. 2 and 3 close up and very white. Brown and Black S. C. Leghorns were a good class. 1 hen 1 pullet in browns good.

Orpington.—Buff. A nice quality. lot of young birds.

Brahmas—Light, a very high class lot especially 1 and 2 cocks, 1 and 2 hens. Langshan were a fairly nice class.

There were fair classes Houdans, Hamburgs, especially Blacks. Campines, anconas, minorcas, Spanish and Dark Cornish.

Turkeys, Geese. Brought out grand specimens and added much to finish out the Show. Some remarkably strong bredeing pens were shown. White Wyandottes, White Rocks, Rhode Island Reds and mating pen of Barred Rocks and other leading varieties were well represented in pens.

Sgd. SETH JONES, Jude.

COST OF KEEPING POULTRY

My attention has been called to statements puporting to have been issued by or under the authority of the United States Government, as to the cost of keeping poultry in these times of high prices, which are detrimental to all concerned, for the reason that they convey the impression that the present prices of eggs and dressed poultry are too high. The statement is to the effect that the cost of caring for a flock of birds at the present time is about in the ratio of 13c for every dozen eggs produced by the Leghorn fowl, and 17c per dozen for eggs laid by thc larger American and Asiatic breeds.

As a matter of fact it costs about double that, by actual test, and that figure would barely cover the cost of grain alone, with no provision whatever for grit, shell, labor investment, or anything, except the grain alone. At present grain cost, the actual expense of keeping a hen in a flock which is housed under model conditions, and cared for exactly as flocks are cared for at the leading experimental stations in the United States, is almost exactly $2.65, taking a fair average of course, and reckoning fair expense for the labor hired or performed, which is the only fair method of computation.

This is not an attempt to discourage farmers from keeping poultry—far from it; but it is an attempt to show that, as a rule present prices for fresh eggs and fresh dressed poultry are not too high, and that the farmer who raises poultry is not getting too much for his product, in spite of present high prices, which are no more than commensurate with the prices of everything else.

It is not true, of course, that the farmer is getting more for his products than they are worth, and it is probably not true that even the middleman is getting too much for his handling of the goods. But the farmer who deals direct with the consumer saves a profit to which he is himself entitled, and in this way may maks his poultry a profitable investment. But the consumer who reads these reports gets the idea that he is being robbed, and is quite likely to rebel, because he has been misled. Prices are high, to be sure, but they are war prices, controlled by conditions over which neither producer nor consumer has the slightest control.

A careful poultryman, who has a model plant of about 500 birds, and who keeps an accurate account of everything that enters into the business is an authority for the statement that the average cost of producing eggs under conditions as they exist today, is very close to 35c per dozen. This does not mean that there is no profit in poultry, or even that the cost to every farmer will reach 35c per dozen for the eggs. This is the cost where everything has to be purchased. When the farmer raises his own grain, the cost is considerably less, and the profit corespondingly large. But whether the cost is 35 cents or less—and 35 cents should be the maximum under present conditions—there is still a profit for the careful poultryman, and he should not be discouraged if the price of grain continues to advance, for the price of both egss and the dressed poultry is bound to advance in just about the same proportion.

The present prices, except possibly in some few cities, is not more than is reasonable under the conditions which now govern the cost of everything.—H. L. Goodwin, in the Main Journal.

Royal Purple Poultry Specific

Is the big link between few eggs and a full basket.

It Increases the Egg Yield

Feed Royal Purple Poultry Specific to your fowls daily in a hot or cold mash. It will keep your hens active and healthy by assisting them digest and assimilate the food eaten.

If you feed our Poultry Specific according to directions to fowls which are properly housed you will get nearly as many eggs during the winter months as you ordinarily get in the summer. It will pay for itself many times over. Read the following letter from Robt. Cameron, Hensall, Ont.

"I have heen using your Royal Purple Poultry Specific for the past year and it pays for itself many times over in the extra production of eggs, and it makes my hens lay in the winter when the price of eggs is high."

Sold in large and small packages.

80 PAGE BOOK SENT FREE

Send for this valuable hook which describes the common diseases of poultry and stock. It tells how to build and remodel poultry houses and how to raise calves without milk. Write for a copy now.

W. A. Jenkins Mfg. Co. Ltd., London, Canada

47

TEN COMMANDMENTS FOR POULTRY MAN

The ten following rules if observed will aid in increasing egg production:

1. Keep more pure-bred hens of a good laying strain.
2. Keep one breed. the best you can get.
3. Select your breeding eggs from the best layers—the latest hens to molt in the fall and winter.
4. Select large uniform eggs of even shape and color.
5. Hatch pullets in FeFbruary, March and April.
6. Keep plenty of green feed where the hens can graze itr egularly.
7. Provide good feed and housing and provide water in clean vessels.
8. Feed a variety of grains, such as wheat, corn, oats and sunflower seed.
9. Feed a dry mash of corn meal, cottonseed meal, wheat bran and shorts or ground oats.
10. Keep a good scratch of straw and throw all grain feed in it to induce exercise.—Mississippi Exp. Sta.

POULTRY NOTES

In Paris markets, the eggs are dated, and one pays according to the freshness, so that it is possible to be certain of newly-laid eggs; or, if it is necessary to be economical, yesterday's eggs, or the day before, are offered at a reduction.

There are still some people who imagine they can tell the sex of eggs before they are hatched, or as soon as they are laid. Some tell us that long eggs always hatch females while others say that such eggs invariably hatch males. When it is considered that each hen shapes her eggs according to the condition of her ovaries, and uniformly lays eggs of similar shape, the absurdity of the theory becomes apparent.

A fat young guinea is a gamey and savory table fowl, though the flesh is dark.

It takes about two weeks to fat. ten a duck for market.

MAKES HENS LAY!

Right now is the time to use International Poultry Food Tonic. Hens need the regulating effect of this wonderful egg-producer to start them laying and keep them laying. Ordinary feed alone is not enough, they need

INTERNATIONAL POULTRY FOOD TONIC

It is made of roots, herbs, and seeds and is purely medicinal. It will increase your egg-production and your profits many times. Endorsed by Poultry men every where.

The cost of International Poultry Food Tonic is trifling a few cents per week for a large flock. Sold by all dealers in 25c, 50c and $1.00 packages.

Write to-day for a free copy of International Poultry Guide, this book will help solve your poultry problems.

INTERNATIONAL STOCK FOOD CO., LIMITED,
TORONTO - - - CANADA

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

WHAT TUBERCULOSIS IS

If I should tell you in an offhand way that there were millions of tiny plants and animals growing in your body all the time, and feeding upon your flesh and blood, you might think I was joking. But I am not joking at all. This is a fact: If you could look inside of your body with a powerful microscope, you would find there germs of many, many kinds, some of them harmful to your health and others very necessary and helpful.

Among this host of wriggling, jostling germs you would probably find in certain parts of the body a plentiful supply of little rod-shaped plants, known to scientific men as "tubercle bacillli," but to common folks as consumption or tuberculosis germs. These are the tiny parasites that cause tuberculosis or consumption. They are not morethan one-ten thousandth of an inch long and may even be as small as one-one hundred thousandth of an inch. Each time a consumptive spits, he may release countless millions of these bacilli, so small are they. This little plant-like body, once it gets a foothold in the right soil of your body, grows with tremendous rapidity and ten or a dozen soon become a host of thousands and millions. As they grow they do two things, first they destroy the tisues of the body on which they feed, such as those of the lung, for instance; and second, they produce certain poisons which get into the blood and circulate about the body, causing the various symptoms of the disease, of which we shall speak later. This is tuberculosis. You may contract tuberculosis in any part of the body, in the skin, or the foot, or the eye, or the stomach, but by far the most common form of the disease among adults is in the lungs, where it is known as pulmonary tuberculosis or consumption. In children, however, tuberculosis seems to have a preference for the bones and joints, and many of the deformities of childhood, such as hunchback or hip disease, are caused by it.

Tuberculosis is not, and probably cannot be inherited. A person may inherit a weak body or a constitution that is especially liable to infection from tuberculosis germs, but he does not inherit the disease itself. There can be no tuberculosis without the germ, and this germ must be taken into the body from the outside, after birth. You have seen a family where one after another of its members has died from tuberculosis, and you probably have thought that on this account the disease was hereditary. The cause is not hereditary but direct infection. If the consumptive in the home spits his millions of germs about the floor and is careless in the use of his personal utensils and dishes, it is almost certain that some other member or members of the family will be infected by this carelessness. Tuberculosis is almost always spread by such habits as these.

What Causes Tuberculosis

As we have said before there can be no tuberculosis without the germ. This is the real and primary cause of the disease. The germ may enter the body in any one of the three different ways. The comonest way is by inhaling it with the breath. Whenever a person who has the tubercle bacillli in his sputum spits where the discharge is not promptly destroyed, the expectoration dries and germs are left in the form of a very fine powdery mass which floats in the air and mixes with the dust. Hundreds of these tiny dry, but deadly germs may ride upon the speck of dust which you see in the rays o fthe sun. These germs are breathed into the lungs and in turn they cause tuberculosis. They may also be taken in with the breath, when one is standing near a consumptive who is coughing or sneezing. The fine spray, which you cannot see as it comes from the nose or mouth, is laden with deadly germs which you take in with your breath.

A second method by which the germs enter the body is by ingestion, that is, by swallowing them with infected food, milk, etc., Children and particularly babies under two years of age, are most liable to this channel of infection. Milk which is used by children should be of the purest type, and as an additional precaution, it should be pasteurized.

A third, and least common method of infection, is by inoculation through cuts and wounds. The germs sometimes enter a bruise or a cut and produce a loathsome form of tuberculosis of the skin, known as lupus.

Everybody takes the germs of tuberculosis along with millions of other germs into his system all the time. Why then doesn't everybody die of tuberculosis? The reason for this is that the consumption germs cannot live on body tissues that are strong, wholesome, firm, healthy and full of resistance. It is only when these tissues of the body become weak, flabby, diseased and "rundown" or non-resistant, that these tiny marauders find an entrance and eat and destroy the parts of the body on which they lodge.

Thus, while the germ itself is the direct cause of the disease, tuberculosis is caused indirectly by those things which make the body weak and non-resistant. Such things may be a lack of proper food, for example, or overwork and excessive strain. Gases, dusts and various poisons produced by certain trades, such as the stone-cutters, the brass founders, or the printers, may weaken the lungs and prepare the soil in this way for the ready growth of the tuberculosis germ. Living in dirty, crowded and dark rooms makes the body weak and allows the tuberculosis germ to get a foothold. Alcohol is another friend of tuberculosis, and has been a cause of the onslaught of the consumption germ in millions of cases. Certain diseases, such as grippe, colds, pneumonia, measles, typhoid fever, or pleurisy weaken the body so that the germs find certain of its organs an easy prey. In fact, anything you do which tends to weaken your natural and normal health and resistance will act as a predisposing cause to tuberculosis. As long as the body is kept strong, healthy and with full power of resistance, which is its natural state, you need have no fear of tuberculosis. The germs cannot grow in such a body.

Symptoms

Tuberculosis is a most subtle and deceiving disease, because it fastens upon a man before he is aware of it. It is readily curable if discovered in time, but the principal reason so many die with it, is because it is not recognized in its very beginning. When the germs find a lodgment in the lungs, let us say, they do not always notify you of their presence at once. It is only when the poisons whicr they cast off have begun to circulate through your system that you recognize that something is wrong. And even then, you may not think it is anything serious until the disease has made considerable progress. It is important, therefore, that you should know the common symptoms of this disease so that you may be able to detect it readily.

Probably the most common symptom is a persistant cough or cold, lasting for weeks and weeks. Not every long continued cough is a sign of tuberculosis, but if you find yourself coughing for a month or more witout much relief, you may begin to be suspicious of this symptom. Coughing is nature's way of ridding the body of the discharges produced by the germs, as they inflame the tissues of the lunngs or the throat. It is a sign that something is wrong with these organs, and it should ont pass unheeded. Cough is not always, however a symptom of tuberculosis. Sometimes the disease may be well advanced before the patient has any perceptible cough. You cannot tell from one symptom. It takes several together with the skilful attention of a trained physician , to detect the presence of early tuberculosis.

Loss of weight and at the same time a loss of appetite is another symptom produced by the poisons of tuberculosis. This symptom taken together with a sort of "run down" and constantly tired feeling should lead you at once to consult a doctor whether or not a cough or any other symptom is present.

Couple these symptoms, however, to a regular afternoon rise of temperature and to night sweats or fevers, and the condition is one that demands the gravest and most prompt attention from the best possible physician.

Sometimes in the very early stages of the disease the patient is so fortunate as to have a hemorrhage or to find blood in his sputum. I say "fortunate," because there seems to be nothing that wil larouse a man to his need more quickly than this symptom. This sign of tuberculosis and the other mentioned here are not given so that you may be able to diagnose your case yourself with absolute exactness. They are given as danger signals, beyond which you dare not go, except at the peril of your life. They are indications which should direct you at once to the best available physician.

Summing up, you should be examined without delay if you have any of the following symptoms:

1. Being below weight or gradual loss of weight.
2. Being tired all the time or gradual loss of strength.
3. Fever in afternoon (even though slight).
4. A lasting cough or cold.
5. Loss of appetite.
6. Hoarseness, continued or recurring.
7. Night sweats.
8. Spitting blood.

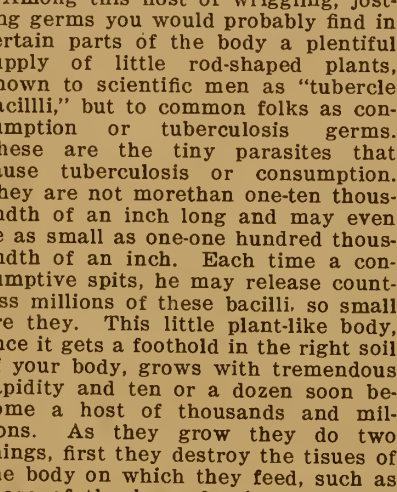
Treatment and Cure.

If a physician could only write out a prescription for the consumptive who calls at his office and tell him to take it and he surely would be cured there would be no question raised as to the possibility of speedy recovery. But when the doctor says, "You need four things to make you well, all of them within your reach, namely, fresh air, rest, wholesome food, and a freedom from worry." many a man thinks the prescription is so absurdly simple that it can never produce a cure. And yet, records of sanatoria show that, where men have folowed this advice and have started in time, 75 percent or more of them have been permanently cured of tuberculosis and the lives of many more have been prolonged for years.

The difference between taking a cure out of a bottle and following the prescribed fresh-air-and-rest treatment, is that the former demands simply punctual dosing with the required medicines, while the latter requires will power, patience, self control, and persistence, all in large quantities. Because many people lack these backbone qualities, they fail in their chase after the cure for tuberculosis.

That consumption can be cured, is demonstrated by the thousands of "graduates" from tuberculosis sanatoria and the army of those who have been cured at home. It is necessary, however, that the disease be recognized early, and the earlier the better.

It is always desirable that a person who has tuberculosis should go to a good canatorium or hospital, for there he will find the best attention and the best support and sympathy in his fight. For taking the cure for tuberculosis is a personal fight, that demands all the best stuff in a man. But if for any reason it is impossible to go to a sanatorium, the cure may be taken in one's own home. The principal things that are necessary are a separate room and bed for the patient, a place to sleep and sit out of doors and quiet and freedom from work and worry. With these things provided.



RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309
Windsor, Ont.

HEART WAS BAD

WOULD WAKEN UP IN DISTRESS.

There is nothing that brings with it such fear of impending death as to wake up in the night with the heart pounding and thumping. This uncertain and irregular heart action causes the greatest distress of both mind and body.

Milburn's Heart and Nerve Pills strengthen and invigorate the heart, so that it beats strong and regular, and tone up the nervous system so that the cause of so much anxiety becomes a thing of the past.

Mr. Archie Beaumont, Edgett's Landing, N.B., writes:—"Have been bothered with my heart and nerves for about six years, caused by overwork and worry. My heart was so bad I would waken up several times during the night in great distress, and my heart thumping. About a year ago I took three boxes of Milburn's Heart and Nerve Pills, and they helped me a great deal."

Milburn's Heart and Nerve Pills are 50c. per box at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

the other essentials of the cure, fresh air, rest and good food, may be secured almost as readily at home as at a sanatorium. If one lives in a district which is reasonably free from smoke and dust and is not very damp, the air may be jut as fresh as in a sanatorium and just as good for the treatment of tuberculosis as the country air. It is not necessary to go to the ment, c.i-s y-e hisd 'LIm (a gkq gk mountains or to Colorado or New Mexico to be cured of tuberculosis. You may be cured almost anywhere, provided you do your part. The cure does not depend so much upon the climate as upon the patient himself. It may be possible for the consumptive to follow the cure for tuberculosis at home under the direction of a physician, and many men have done so and have gotten well.

The principal caution that should be observed in such a case is that of preventing the spread of the disease in the family. There is little reason why a consumptive should not be as safe a person about the house as anyone else. All that is needed is that he use care in the disposal of his sputum discharges. These should be absolutely destroyed. One of the simplest ways is to spit in a small paper napkin and then to fold up the napkin and put it in a paper bag. After a number of expectorations the bag and the contents may be burned up. If such precautions, the use of separate dishes, towels, and other utensils, care in kissing, and ordinary cleanliness are employed, there is little or no danger of infection to other members of the household. It is the careless consumptive who should be feared. The careful one is not a menace to anyone.

One more precaution is necessary, a warning against fake "cures", drugs, etc. advertised to cure tuberculosis. The National Association for the Study and Prevention of Tuberculosis, the highest authority on this subject in America, by special resolution in May, 1913, declared that it knew of no remedy or treatment that would cure tuberculosis other than the well known method I have described here. Every dollar spent on other "cures" is wasted, and every hour given to reliance on such alleged remedies means the loss of precious time that should be used in the right way. There is no druggist, doctor, or mail order concern that can sell you a cure for tuberculosis, all of their advertised lies notwithstanding.

Some Don'ts and Dos.

Don't get tuberculosis yourself; don't give tuberculosis to others.

Don't neglect a cold or a cough, but go to a doctor or a dispensary.

Don't live, study or sleep in rooms where there is no fresh air. Fresh air and sunlight kill the tubercle bacilli and germs causing other diseases. Therefore have as much of both in your room as possible.

Don't spit on the sidewalks, playgrounds, or on the uoors or hallways of your home or school. It spreads disease, and is dangerous, indecent and against the law.

Do not eat food that has been exposed to flies or dust, or touched by unclean hands. Fruit and vegetables should be rinsed or washed thoroughly before using.

Get enough sleep. Most people need 8 hours a day. Growing children need 10 hours. Sleep with windows open, and when possible outdoors.

Take plenty of outdoor exercise. Avoid excess in athletics. Too much exercise may cause heart trouble. Do not eat or drink when overheated. Do not exercise soon after eating.

Take a bath or wash the body with a wet sponge or cloth frequently. If you have no bathtub use the public bath or improvise a tub.

Extent and Prevention

If you stop to think of your friends and relatives, you will not have gone far down the list before you will find a family, one or more of whom have had tuberculosis. In fact, there are very few families in this country, which have not felt the touch of this plague. Is it to be wondered at, when there are 200.000 deaths from this one disease every years in the United States, when one in every ten deaths is caused by it, when today there are no less than a million consumptives in this country? Typhoid fever, diphtheria, smallpox, scarlet fever, and all the other infectious diseases dwindle into insignificance when they are compared even all together, with tuberculosis. Not even cancer, increasing apparently in this country, can equal by one-half the death roll of consumption. ruly Dr. Oliver Wendell Holmes has called it The Great White Plague.

But it is the very wideness of the extent of this disease that has given rise to one of the greatest preventive movements the world has ever known. Beginning in 1904, the great national campaign against tuberculosis in the From a few scattered sanatoria, there have developed a chain of hospitals and allied institutions for the treatment of tuberculosis in almost every state in the Union, over 550 of them altogether. From hardly any effort at organization has grown an organized and cooperating army of over 1,000 United States has developed from a handful to a huge army numbering hundreds of thousands and millions. anti-tuberculosis associations and committees designed to down this plague in their respective communities. Dispensaries, open-air schools, exhibits, lectures, and many other agencies and forms of work have sprung into being to aid the fight against it. From newspapers, schools, theatres, churches, lodge rooms, shops, in fact from almost every possible channel, the truth about the prevention and cure of tuberculosis is being preached and spread.

Tuberculosis can be prevented. It is an infectious disease. We know the germ that causes it. What is needed, is to prevent the spread of the germ. It is to this end that the freat campaign against utberculosis is being directed.

This world-wide war against consumption is seeking to accomplish four things:—

First, the instruction of the people in every possible way concerning the fundamental facts that tuberculosis is a communicable, preventable and curable disease.

Second, the removal and destruction of those causes which tend to

Granny's Talk to Young Mothers

"Granny" Chamberlain

"Few young mothers realize the extent to which a cold lowers the system and makes it susceptible to disease. The majority of diseases arise from germs, but it is not widely known that a healthy system will repel their attacks.

Mothers should never allow a cold to run for 24 hours without attention. If this is made a rule there will be less sickness for young mothers to worry over. A good reliable medicine for coughs, colds, croup and bronchitis should always be kept in the home. You may say that you have no confidence in cough medicines, but that is because you have never tried

Chamberlain's Cough Remedy

the medicine that is thoroughly reliable and has stood the test of half a century. There is nothing in it unsuitable for even the baby.

Yours for Health,
—Granny Chamberlain

34

15 cents VOLPEEK
MENDS POTS & PANS
Mends Graniteware, Tin, Iron, Aluminum, etc. in two minutes. Without tools. 30 mends for 15c. From your dealer or us, postpaid
Vol-Peek Co., P.O.Box 2024, Montreal

A time thief —caught by Gold Dust

Grease is what holds dirt together and, if you let it, this grease will steal your household time—hours and hours and hours of it. But don't let it. Instead let Gold Dust dissolve the grease and *save* your time.

Just try washing some greasy dishes with Gold Dust. See how much time Gold Dust will save—because it more quickly dissolves the grease.

Save still more time by using Gold Dust for any kind of troublesome household dirt, such as finger marks on woodwork, or grease-spots on the kitchen floor.

For time-saving results there's nothing like Gold Dust. For sale everywhere in large and small packages.

GOLD DUST

The Busy Cleaner

Made in Canada

THE N.K. FAIRBANK COMPANY
LIMITED, MONTREAL

MINARD'S "KING OF PAIN" LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

make the body weak and non-resistant. This means that the anti-tuberculosis campaign is against dirty, dark and over-crowded tenements; dusty and unsanitary trade processes; the sale of unclean and unwholesome food; and, in general, against anything that is unhealthful.

Third, the destruction of the sputum and other discharges of the consumptive. This may be done through educating the patient to care for himself in the home, or it may require the removal of a dangerous case to a hospital. It is, therefore, necessary that there should be institutions for the homeless, dying and dangerous consumptives who because they are unable to care for themselves properly or are ignorant of the right methods, must be treated in hospitals.

Fourth:—The care of curable cases in sanatoria, and other institutions for that purpose, including open air schools for the treatment of consumptive children and the building up of those who are anaemic and sickly.

How You Can Help

You can have a share in this fight against tuberculosis. Let me tell you a few ways in which you can help.

1. You can see to it that your own physical strength is not depleted by overwork, excessive indulgence in alcoholic liquors, vice, or otherwise.

2. You can demand both for your own safety and for that of your weaker fellows, that your shop or office be clean, sanitary, well lighted and, above all, well ventilated, with an abundance of fresh, pure air.

3. You can insist that your family, yourself included, sleep and live as much as possible in the open air. You can urge the open window especially at night for everyone in the house.

4. You can inform yourself more fully about tuberculosis. The National Association for the Study and Prevention of Tuberculosis, 105 East wenty-second Street, New York City, will gladly send you literature if you will drop them a card and mention what you want.

5. You can stop spitting on the floor or the street and can urge others to follow your example.

6. You can spread the gospel of health by letting someone else read this Bulletin.

WHEN SICKNESS VISITS THE HOME

Although sickness in the home is to be guarded against by observation of the common laws of sanitation, hygiene and dietetics, yet, at some time or other, in spite of precautions, sickness is liable to come into the family. It is only a bit of preparadeness on the part of the efficient home-maker to acquaint herself with some of the simple things that can be performed by anyone that are necessary to the comfort of the patient who is compelled to lie in bed.

It is the custom, at the present time to provide a trained nurse to care for those who are seriously ill, and this should always be done when advised by the attending physician. But in minor or chronic cases, or when a patient is bedridden on account of the infimities of age, it is not ayways possible to secure the services of a trained nurse, or it is too great a tax on the family finances to provide such care and the work must be done by some member of the household.

Even when a family seems to be composed of members whose health is supposedly never failing it is well to be prepared for the emergency of illness to have one bedroom at least that is furnished suitably for use as a sick room, The room should have two windows, if possible, with a floor that has been entirely painted or varnished and supplied with small rugs that can be removed for dusting without moving the bed. It is difficult to keep a carpeted floor in a sick room in a presentable condition and it certainly cannot be kept in a sanitary condition, and it is distressing to a nervous patient to be obliged to see a great deal of work being carried on in the room. Small rugs can be removed and shaken and a bare floor can be cleaned with an oiled dust mop so quietly that the patient scarcely realizes that such work is being performed and the room can be thus kept in a sanitary condition.

Plain wall paper is excellent for any bedroom and is certainly to be advised for a sick room. Sometimes even the inconspicuous stripes of the wall paper become a torment to a sick person who is compelled to gaze on the four walls or the ceiling of one room for many davs and sometimes sleepless night in succesion.

It is a good plan to have at least one single bed in the home that may be used for the sick room, for it is very much easier work to care for a sick person who can be easily reached from either side of the bed. It is a very great strain on the muscles of the shoulders and back of a sick person who is lying in the middle of an ordinary double bed, at arm's length from the nurse. If the bed be low it may be heightened by the addition of blocks to the legs, so that in cases of long illness the care taker will not be physically worn by unnecessary stooping. The springs of the bed should be sufficiently strong to supoprt the body, in sickness or health in a flat, straight position without sagging in the centre and the mattress should be soft and free from lumps.

A wool blanket in the place of the ordinary cotton-filled comforters is light and warm and with the sheets and spread may be washed as often as necessary. In preparing the bed for a patient the pads and sheets should be perfectly smooth and free from wrinkles, the lower sheet should be large enough to fold well under the mattress on all sides. Considerable practise is necessary before an amateur is able to change th bdding skillfully, but if a plan is studied out and

A MESSAGE TO WOMEN!!

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:

Mrs. M. Summers, Box 309 Windsor, Ont.

BOY'S RUSSIAN SUIT.

By Anabel Worthington.

Again and again fashion demonstrates that for the little lad up to six years of age no other style can quite take the place of the Russian suit. It enjoys popularity because the mothers have agreed that it always looks neat, is the easiest kind of suit to cut out and make, and with its plain lines and coat closing is very easy to launder when made of a tub fabric.

The illustration shows this distinctively boyish suit to be all that is correct and desirable for the small boy. At a lowered waistline the blouse is belted with self material, neatly confining the fulness. Banding in contrasting color gives a practical but pretty trimming touch to the low round collar, the pocket, belt and edge of the overlapping front. The sleeve is uncuffed, fitted at the lower part with box plaits. Either the straight or bloomer trousers may be chosen.

For a play garment St. Nicholas cloth, gingham, linen and the new cotton-covert cloth are suitable weaves for selection. For kindergarten wear serge, homespun, cheviot and the wool mixtures are excellent materials. Of course, velvet and corduroy may be considered also. There is no difficulty to meet in copying the design—the illustration instructions make every step so clear that a school girl can successfully reproduce the design.

The suit pattern, No. 8,054, cuts in sizes 2, 4 and 6 years. To make in medium size requires 2½ yards 36 inch material, making either trousers; 4⅜ yards of banding

To obtain the pattern send to the office of this publication.

She Often Had to Lay Off For a Day

MRS. MANTLE TELLS WHY SHE USED DODD'S KIDNEY PILLS

Results, She States, Were So Good That She Recommends Them to All Sufferers From Kidney Disease.

St. John, N.B., Feby. 17th, (Special.)—Mrs. Mantle, an estimable lady living at 117 King St. East, this city, is always ready to tell of the benefit she has received from using Dodd's Kidney Pills.

"Yes, Dodd's Kidney Pills have done me a wonderful lot of good." Mrs. Mantle told an interviewer. "For three years I was in a worn-out condition, often having to lay off for a day or two.

"I suffered from drowsiness and sharp pains across my back. I had headaches, and was subject to neuralgia and rheumatism.

"Dodd's Kidney Pills helped me so much that I can highly recommend them to anyone suffering from kidney disease."

Dodd's Kidney Pills are purely a kidney remedy. Making the kidneys healthy enables them to strain all the impurities out of the blood. That means pure blood and good health. Dodd's Kidiney Pills are recommended by thousands of women who were once run down and worn out.

GIRL'S DRESS.

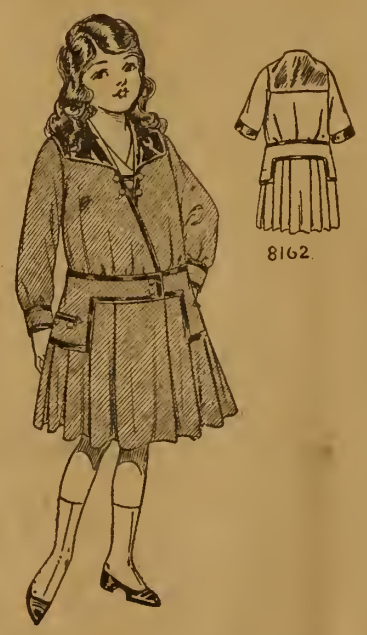
By Anabel Worthington.

It had to be, of course, that Fashion would favor the small girl just as she did mother, and make her new spring dress with a vest and a separate belt and show the panel front effect so that life would be really perfect.

The fronts of the plain waist are lapped over the surplice vest, so as to give diagonal closing; the strap trimming just below the collar gives added attraction to the vest in light tone. The sleeve is easily full and may be short with a band finish or long with a wristband cuff of material trimmed with bands of contrasting goods to match the square collar. A two gore plaited skirt is joined at normal waist li , where the separate belt is arranged; the belt has its sides lengthened to form pockets, the pocket opening being bound with satin.

Light weight woolen goods, serge, gabardine, poplin, linen or cotton weave may be chosen for this model. In linen or cotton a piping of contrasting color goods will be as effective as the silk or satin trimming on a dress of woolen material. If you really want to "dress up" your daughter at small cost, buy the pattern and copy this simple frock.

The dress pattern No. 8,162 cuts in sizes 6 to 12 years. To make in size 8 requires 3½ yards 36 inch material, ½ yard 36 inch contrasting goods and ½ yard 22 inch linen or silk for vest.



To obtain the pattern, send to the office of this publication.

Fashions Dept.

How to Order Patterns.

Order by number, giving age or measurement as required, and allowing at least ten days to receive pattern. Also state in which issue pattern appeared. If two numbers appear for the one suit, one for coat, the other for skirt, thirty cents must be sent. Address Fashion Department, "The Maritime Farmer, Sussex, N. B. Be sure to sign your name when ordering patterns. Many forget to do this.

Positively no patterns will be sold under 15 cents each, owing to advance in cost of same.

When ordering, please use this form:—

Send the following pattern to:

Name .....

Post Office.....

County .....

Province .....

Number of Pattern.....

Age (if child or misses' pattern).....

Measurement—Waist .....Bust.....

Date of issue in which pattern appeared. .....

followed each time even that will become a simple matter.

A smiling face and a readiness to accept with seeming calmness the whims of a weary patient are necessary adjuncts on the part of the nurse and will go a long way toward making the sick room a pleasant place. Pleasant surroundings, cheerful conversation, good food, good care, plenty of fresh air and strict adherence to the adivce of a reliable physician, are all necessary to the recovery of those who are suffering from the effects of disease.

ENLARGED GLANDS

Lymphadennitis is inammation of a lymph gland, and follows an invasion by some infestious germ. The first step in treating is to ascertain the nature of the germ that is causing the trouble. In cases of chronic lymphadenitis in the neck, physicians often trace the infection to trouble with the nose or throat. As soon as any neck swellings develop in a child the throat should be examined for enlarged tonsils or adenoids and the mouth for decayed teeth. If the trouble comes from any of those souces, correcting them usually results in a gradual decrease in the size of the swelling.

If, after all these precautions have been taken, the swelling remains as large as before, or even grows worse, it is time to suspect tuberculosis lymphadenitis — a common chronic trouble in childhood. nIthese cases the first duty is to make very sure of the milk supply.

If possible the child should drink only milk that comes from cows that have been tested for tuberculosis. If that is not posible, then the milk should always be Pasteurized or boiled. The tuberculim-tested milk is the best, because its food value is not impaired.

Sometimes, in spite of all that can be done, an enlarged gland softens, and the surface of the skin shows signs that breaking down will occur, Under these conditions a surgeon should remove the gland without loss of time.

But operation or no operation, when children have enlarged glands in the neck or elsewhere they should always be placed under the care of the physician. Very often well-meaning mothers make local applications that do more harm than good, because they hasten the softening that is so much to be dreaded. What is true of opplications is also true of handling or rubbing. Mothers and nurses, more energetic than wise, have been known to spend much time on massage, with the worst possible results. All tuberculous processes and glandular swellings should be kept as quiet as possible. For that reason, if the swelling occurs on some part of the body where there is much movement, such as the groin, the patient should either remain in bed or the part affected should be made immovable by means of splints and bandages. An open-air life and nourishing food are essential for everything possible must be done to maintain the general health. The enemy as yet has gained only a local footing; the fight must be to prevent the disease from becoming general and constitutional.

TO REMOVE INK

Ink spilled on the carpet may be taken out without leaving a stain if dry salt is applied immediately. As the salt becomes discolored brush it off and apply more. Wet slightly. Continue until ink has disappeared.

So long as there is work to do there will be interruptions—breaks in its progress. And it is a part of one's character growth to bear these timely or untimely interruptions without any break in good temper or courtesy.—Business Man's Calendar.

To make vinegar from cider, to each 2 quarts of cider add 1 cup molasses and ½ cup yeast; keep covered where the temperature is 70 degrees to 90 degrees, and it will soon make vinegar; then draw it from the dregs, and keep in a jug, or bottles, tightly corked. Cider from vinegar, should be made from good sound apples. The cider made last fall will be alright.

Real Home Made Pie—

Yes, Ma'am!
Real homemade Pie!

With top and under crust that truly melt in your mouth—and a generous filling of your own delicious homemade preserves or home-grown fruit.

That's a pie worth eating, and worthy of your baking, and it's the kind of pie you can make every time with

BEAVER FLOUR

MILLED OF BLENDED WHEAT

"Beaver" Flour equals any of the "special pastry flours" because it is, in itself, a special pastry flour—being the choicest Ontario fall wheat, blended with western spring wheat to give it strength.

This is why Pies, Cakes, Cookies, Tarts, Doughnuts, Buns and Fancy Pastry —when made with "Beaver" Flour—are so light, so flaky, so uniformly good.

This is also why the Bread and Rolls—made with "Beaver" Flour—have a delicate, nutlike flavour that is totally lacking in western spring wheat flours.

Just try "Beaver" Flour for anything you are baking—and see what happy results you get, every time.

DEALERS—write for prices on Feed, Coarse Grain and Cereals. 200

THE T. H. TAYLOR CO. LIMITED, - - CHATHAM, Ont.

CROWN BRAND CORN SYRUP

Children prefer it to the most expensive butter. Why not save money by using more of this syrup ?

In 2, 5, 10 and 20 pound tins—3 lb. Glass Jars.

Write for free Cook Book. 34

THE CANADA STARCH CO. LIMITED, - MONTREAL.

EFFICIENCY

By Mrs. A. G. Dickson, Centre Napan, N. B.

At no time, perhaps, in the worlds history has there been so great need for efficiency as during this period of the great struggle of Nations for might against right; all our resources need to be developed and conserved as in no other period. The products of the forest, mine and field are needed in immeasurable quantities and efficient workers of all classes are in great demand.

We of the allied forces are fighting a foe, who as a nation has attained an efficiency which enables them, after years of fighting, to be still 'foemen worthy of our steel." How have they attained this proficiency? Perhaps we may be able to learn from them how to make our nation a great power, which may be used for the uplift and benefit of mankind instead of for world dominance.

Wise people tell us that it was in the schools of Germany, that the sinister powers of that brilliantly clever land sowed the seed that has brought upon this beautiful world the most horrible calamities that it has ever known. The doctrine of Militarism was taught persistently in the schools. Think of the influence of the schools; if militarism can be taught there with such powerful results why not character, service, brotherhood of man?

A nations best asset is not its crops, cattle, sheep, forests, fisheries and mines, but its children. A nations future greatness therefore depends principally on its children. Let us, who are proud of being Canadians aim in every possible way to assist in raising up an efficient people to replace so many of our bravest and best who have done their bit for Canada and world freedom and are laid to rest somewhere in France.

I believe the teachers in our schools, more than any other, have the opportunity of moulding the minds of our boys and girls. How important that they should realize the great charge laid upon them. It is not so much the mental development of our children it is their moral and physical good, that shall I say, is most important. Children who are taught to do each little duty to the best of their ability, to be truthful, courteous and thoughtful of others, are building characters which will make of them efficient men and women in whatever calling of life they may persue; for if they are careful in small things they will also be careful in great places, should they travel so far.

That efficiency is demanded of us there can be no doubt. We have the injunction iven by our greatest authority "whatsoever thy hand findeth to do, do it with thy might."

Our boys after school should learn to do, that thing well, for which they are best fitted. The world today demands experts in all trades and callings. Our girls should learn to be experts in household management, food values and preparation, sewing, laundry work and all arts which will help them to make a happy home. They may take up other useful work and do it well, but all paths for them lead usually to the home.

How important then that they be taught to be efficient home-makers which is, after all, the greatest profession for women.

I might say in closing that the Government of any country is a great factor in developing the efficiency of its people. They control our schools; we want the best kind of education for our children; we want their physical well-being cared for. Good roads in rural sections make for greater efficiency. I know our Government is anxious to assist Agriculture in all possible ways. Let us ask of them, those helps which the country most needs.

"God give us men, a time like this demands
Great hearts, strong minds, true faith and willing hands.
Men whom the lust of office does not kill;
Men whom the spoils of office cannot buy;
Men who possess opinions and a will;
Men who have honor, men who will not lie.
For while the rabble with their thumworn creeds,
Their large professions and their little deeds
Wrangle in selfish strife—lo! Freedom weeps.
Wrong rules the land and waiting Justice sleeps."

Nerves of the Stomach

Were Weak and Inactive as Result of Nervous Prostration—Lost Twenty Pounds—Had to Take Sleeping Powders to Get Any Rest

Many people never realize that the movement and action of every organ of the human body is dependent upon the energy supplied by the nervous system.

When the nervous system gets run down there is weakness throughout the entire body. You feel tired and languid and your stomach and other digestive organs are similarly affected. Appetite fails, digestion is poor, you do not get the good of what you eat and gradually grow weaker and weaker.

This process can only be stopped by such treatment as Dr. Chase's Nerve Food, which goes directly to create new nerve force and thereby to invigorate the whole human body.

Mrs. Geo. S. Ellse, 46 Davidson street, St. Catherines, Ont., writes: "My husband had an attack of nervous prostration, and, although he doctored for some time and tried different other medicines, he could noe get relief. He had to resort to sleeping powders given him by the doctor to make him sleep. The greater part of the trouble seemed to be with the nerves of the stomach. He began to lose weight and kept on going down until he had lost twenty pounds. We had read advertisements in the newspapers for Dr. Chase's Nerve Food, and noticed that it seemed to be doing a lot of good for people troubled with nervousness, so my husband decided to try it. He found benefit almost from the start, and continued this treatment until he had taken about twelve or thirteen boxes. The resuts were most satisfactory. He is now enjoying good health, sleeps well, and has gained back nearly all the weight he had lost. He also uses Dr. Chase's Kidney-Liver Pills occasionally, and thinks them an excellent remedy. I have also used this latter medicine for dizzy spells and liver trouble, and was completely cured of these complaints. We think a great deal of Dr. Chase's medicines, and cnnot speak too highly of them."

Dr. Chase's Nerve food, 50 cents a box, a full treatment of 6 boxes for $2.75, at all dealers, or Edmanson, Bates & Co., Limlted, Toronto. Do not be talked into accepting a substitute. Imitations only disappoint.

THE HOME GUARD

Taken from the December, 1917, number of The Journal of Home Economics.

"I don't like to leave home," said Sergeant Sugar doubtfully. "After all, they depend pretty much on me over here in the United States."

"Don't be a Slacker," admonished Lieutenant Lard.

"No time to argue, boys, forward march!" came the sharp command from General Wheat. "Off to France—but halt—what's the matter, Sergeant Sugar?"

"The children are so fond of me, General. I don't see how I can get away."

"Do you boys imagine for a minute that you are leaving the folks at home without any protection? How about it? Did you think that, Major Meat?"

"I didn't exactly think that, sir," came the cautious reply.

"Attention! Do you see that encampment to the right " Yes, sir!"

"That encampment is only one of several hundred squadrons which we are leaving here. Enlisted in the Home Defense League is General Milk, known throughout the world, probably one of the ablest military-food experts in the world, absolutely unsurpassed for efficiency. He is a man of somewhat your type, Major Meat.

"Then there is Colonel Corn. Colonel Corn is a fellow who has been hiding his light under a bushel. Ha! Ha. Yes, everybody in the South has known him for years, I know, but why his fame didn't spread up North I can't understand. I can tell you I have absolutely no compunctions about leaving home when I know I'm leaving a fellow like Corn to look after things.

"Now, just a word to you, Sergeant Sugar. Ever heard of your superior officer, Major Molasses?" "Yes, sir, but——"

"No 'but's', Sergeant. I want you to know that Major Molasses is a fellow who can fully as well look after the sweet teeth of American children as you can, Sergeant." 'Yes, sir."

"Very good. Perhaps you'd like to hear the names of some of the other officers. Major Meat, you may be interested to know that Captain Cheese and Lieutenant Fish are ready to carry on quite a bit of the work which you must necessarily leave when you go to France.

"And then there's Sergeant Spud, who is going to be able to do a great deal this winter. He's what I call a good officer." "Yes, sir."

"There's a young Corporal in the Home Defense who'll do a great deal of what you might do if you could stay, Lieutenant Lard."

"Who is that, sir?"

"Corporal Cooking Oil. He's one of the Vegetable Fat Family. I understand that your family used to consider yourselves somewhat better than the Vegetable Fats, eh Lard? Well, war is a great leveller. I imagine the young fellow will be giving you a good run for your money before long. Well, boys, see you're not quite so important after all. And it's on to France, is it?" "It is indeed, sir "

"To the front then! May fortune bless our voyage! Forward March!"

HOME CULTURE

By Mrs. M. Dunphy, Lower Kingsclear, N. B.

I think perhaps there is not as much attention given to Home Culture as there should be. We are more apt to want our children to shine (as we sometimes say) in society more than in the home, therefore Home Culture is more or less neglected; but I think if we look at it in the right way it should be a matter of great importance to every one of us for upon it depends the happiness of our homes. One writer tells us the laws of good breeding in no place bear more gratifying results than in the home circle; tempered with love, and nurtured by kindly impulse they bear choicest fruit.

A true Lady will show as much courtsey and observe the duties of politeness as unfailingly toward every member of her family as toward her most distinguished guest. I am afraid we do not do it as much as we should. We should never forget the first book children read is their parent's example. If this is forgotten we may find in the loss of our domestic peace that while our children well know the right path, they may follow the wrong. An impious, profane, or

CAUGHT COLD NEGLECTED IT

WAS SICK FOR MONTHS.

You should never neglect a cold, however slight. If you do not treat it in time it will, in all possibility, develop into bronchitis, pneumonia, asthma, or some other serious throat or lung trouble.

On the first sign of a cold or cough it is advisable to cure it at once, and not let it run on for an indefinite period.

For this purpose there is nothing to equal Dr. Wood's Norway Pine Syrup, a remedy that has been universally used by thousands for over twenty-five years.

You do not experiment when you buy it.

Mrs. W. G. Paquet, Smith's Falls, Ont., writes:—"I was troubled with lagrippe. I caught cold, and neglected it, and was sick for several months. I took three bottles of Dr. Wood's Norway Pine Syrup, and before I finished the last one I was entirely cured. I would not have any other cough medicine in the house.

It also cured my baby, who was very sick with bronchitis. She had the doctor three times, and he recommended 'Dr. Wood's.' I highly recommend it to those who need a quick cure."

See that you get Dr. Wood's Norway Pine Syrup when you ask for it. Do not accept a substitute. It is put up in a yellow wrapper; three pine trees the trade mark; price 25c. and 50c.; manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

THE WINTER TERM
of the
Fredericton Business College
opens on
Monday, January 7, 1918

Pamphlet giving particulars of our courses of study, rates of tuition, etc., will be mailed to any address os application.

W. J. OSBORNE, PRINCIPAL,
Fredericton, N. B.

BUSINESS MEN

Are just as anxious to discover and employ well trained and talented help as young people are to secure good positions.

No better time for beginning preparation than just now.

Catalogues containing Tuition Rates and full information mailed to any address.

The Fredericton Business College — S. KERR, Principal

The Nova Scotia "Lumber King" says:

"I consider MINARD'S LINIMENT the best LINIMENT in use.

"I got my foot badly jammed lately. I bathed it wtll with MINARD'S LINIMENT and it was as well as ever next day.

T. G. McMULLEN.
Yours very truly,

vulgar word or thought may operate upon the heart of a young child, like a careless spray of water upon polished steel, staining with rust that no efforts can thoroughly efface. Improve the first ten years of life as a golden opportunity. IT is the seed time, and your harvest depends upon seed then sown.

Another thing is yielding to one another. One of the greatest disciplines of human life is that which teaches us to yield our wills to those who have a claim on us; even in trifling every day affairs the wife to husband, children to parents and to one another. In cases where principle is concerned it is of course necessary to be lrm and that often requires moral courage which should be taught more in our homes. Moral courage is a rare endowment and those who possess it are able to act with perfect independence of the opinions of others and govern themselves only by the laws of propriety, uprightness and charity.

Few mothers can overestimate the influence which the companionship of books exerts in youth upon the habits and tastes of their children, therefore we as mothers who have the welfare of our children at heart, will not neglect the choosing of proper books for them to read. While they are under our care we should select for them such as will interest and instruct. The poison imbibed from bad books work so secretly that their influence for evil is sometimes worse than the influence of bad associates. A taste may be easily cultivated for books with good wholesome reading as well as being instructive and interesting. I think you will agree with me in saying the Bible is the very best Guide we can have in teaching Home Culture. It is well to remember that every blessing of our lives, every joy of our hearts, and every ray of hope shed upon our pathway have had their origin in religion and may be traced to the influence of Bible teaching. In the earliest days the mind should be impressed and stored with religious truth. It should be taught so early that the mind will never remember when it began to learn; it will then have the character of innate, inbred principles incorporated within their very being.

ECONOMICAL FUN

The American Cookery magazine in his January issue, suggests a way to entertain in war-time. This may be an idea for Women's Institutes when they are entertaining the gentlemen.

"We had been preaching and practicing economy, and having it preached to us, for so long, that our club decided, as an antidote, to see if it couldn't furnish us with a little fun as well. So we gave an ECONOMY TEA.

The invitations were written on common wrapping paper, neatly trimmed, and bore the following jingle:

Wear a cotton dress
Or a last years suit;
A hat out of date
Or a leatherless boot.
Something to show,
Like the F.A.C.,
You believe in
The strictest economy.

The only decorations were American flags and some bunting. For place cards for the women we used white cards to which were glued bone buttons (the kind with two holes). A face was drawn on each button, with the two holes to represent eyes, and below these were pasted headless pictures illustrating some phase of economy in its relation to the war. For instance, there was a woman with a hoe, one seated at a sewing machine, another canning fruit, a Red Cross nurse, a cook, a woman chauffeur and an aviatrix.

The cards for the men consisted of an acrostic of the word 'Economy'—one letter to each card, suggesting some needed economy.

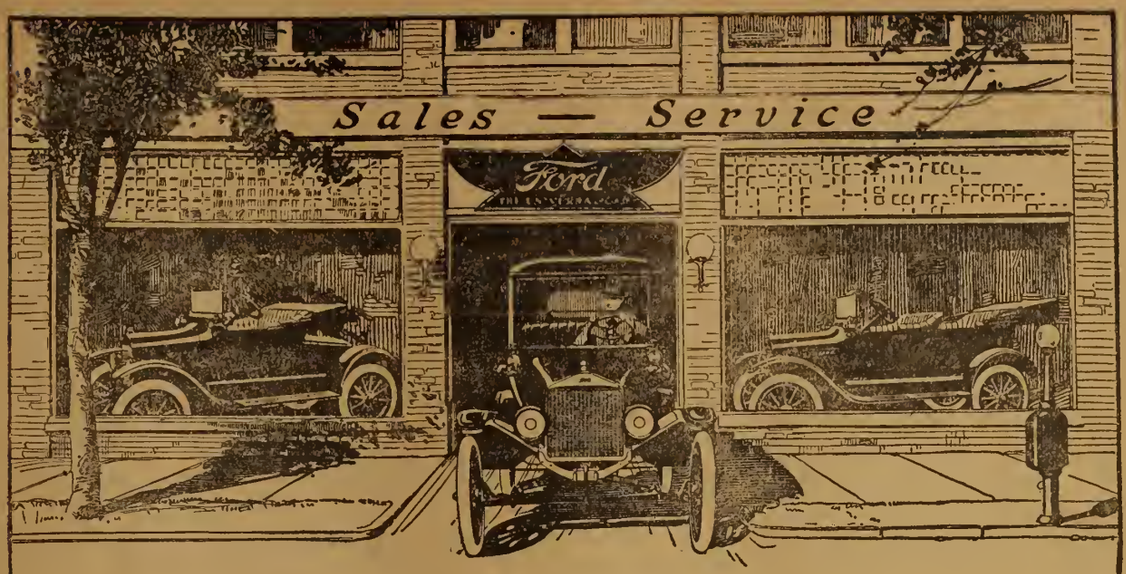
E stands for Eating—it makes you too fat.
C for Cigars—no money for that!
O for Onions—you're wasting your strength.
N for None—your share of the cake.
O for Oats you must share with the horse.
M for the Meat you must give up, of course.
Y for the Yolks of the eggs you forsake

For stunts, we passed paper and pencils to the men and asked them to design a dress that could be made out of three yards of blue serge, two yards of blue silk, and a yard of chiffon. The women were asked to see what they could do (on paper) with six nails and two boards. For their sharpness in creating the best designs, the prize in the men's contest was a paper of pins, and in the women's a box of tacks.

Another contest was called 'Intensified Farming.' To the one who succeeded in raising the greatest number of vegetables in a given area of paper was presented a hoe.

For refreshments, we had tea and hard tack of wafers (made by spreading a paste of cornmeal, sugar and cinnamon, wet with a little water, on square crackers that had been lightly buttered, and browned in a slow oven), eggless cake and short ration sandwiches, made of war bread spread with a filling of boiled beef, macaroni, celery and a bit of onion ground together and mixed with boiled mayonnaise, and cut into very small portions.

A kitchen range can be kept beautiful by simply rubbing it over with a small piece of suet, and then polishing with newspaper.



Complete Service to Ford Owners Everywhere

COURTEOUS attention to your needs wherever you may travel is something you appreciate, and being a Ford owner you can get it. You are always "among friends".

There are more than 700 Ford Dealer Service Stations throughout Canada. These are always within easy reach of Ford owners —for gasoline, oil, tires, repairs, accessories, expert advice or motor adjustments.

The cost of Ford Service is as remarkably low as the cost of the car itself. Nineteen of the most called for parts cost only $5.40. Just compare this with the cost of spare parts for other cars and you will realize the advantage of owning a Ford.

Ford
THE UNIVERSAL CAR

Touring - - -	$495
Runabout - - -	$475
Coupe - - -	$770
Sedan - - -	$970
One Ton Truck -	$750

F. O. B. FORD, ONT.

Ford Motor Company of Canada, Limited
Ford, Ontario

"WHAT OF TOMORROW"
is the problem of every thinking man and woman.

Yesterday is PAST—Today is HERE—TOMORROW comes the reckoning.

A storehouse of knowledge is of no value if it fails to provide a livelihood.

It will profit YOU to secure a business training in this practical and successful school of business.

Moncton Business College,
Moncton, N. B.

It pays to attend an Accredited School.

AGRICULTURAL RELIEF OF THE ALLIES FUND

The following letter from Dr. Robertson, Chirman of the Canadian Branch of the Agricultural Relief of the Allies Fund, was read at the reent meeting of the N. S. F. A. at Truro.

To the Nova Scotia Farmers' Association, in Annual Meeting assembled:

I regret that duties in connection with patriotic work and war-service of various kinds prevents me from attending the annual convention. Under the circumstances I am glad to avail myself of the opportunity to send a message. In it I wish to remind you of two matters and to invite your kindly consideration, to be followed, I hope, by action in keeping with your opportunities and the circumstances.

The first is in reference to the food situation; the other is the special appeal made to the farmers of Nova Scotia to join other farmers in providing first-aid for the peasant farmers of our Allies who have lost everything through the awful process of war.

Gravity of the Food Situation

The scarcity of suitable foods is causing the war situation to become increasingly grave on the side of the Allies. France and Italy are short of wheat and fiour and fats. There is not enough food on our side to let us be free from anxiety; and if we all eat and waste, then there will be still greater privation among our Allies—privation which may mean starvation for women and children and the weakening of our position in the war. That is the gravity of the food situation.

Why did we not know about that sooner? Well, the men at the heart of things have known it, but the people would not hear or heed because the abundance all about us was so great. I sometimes think, with my body in Ottawa and my mind behind the lines at the front.—If they hear not Moses and the prophets, (men of intelligence, vision and responsibility) neither would they be persuaded although one of our soldiers rose from the dead and said, "You folks at home are putting in peril all that I died for."

Since the war began the farmers of Nova Scotia have risen to the great occasion nobly. Scme of the best of them have sealed their devotion by the supreme sacrifice of Service unto death in Belgium and France. Those at home have spared sons and brothers for the army until the farms are stripped almost bare of necessary labor. I honor the men and women who have toiled bravely, early and late, to the last ounce of their strength. It has been for a great cause. Now, as ever, he that endureth to the end shall be saved. So must we not now slacken our efforts. The logical sequence to the work that has been done for greater production is to follow it by a further effort ofr still greater production. We should use all the experience we have thus far gained in planing and carrying forward a campaign for larger acreages and higher yeilds in 1918 and the years that are to follow.

I do not want to urge you to do more than you can do. I would like you to understand the situation, and leave it with you to do alk you can to make sure that every bit of food that can be saved for the Allies and the armies is being saved; and that every pound and bushel of food that can be produced in Nova Scotia will be produced. I pray that the Almighty may give you health and strength of body, mind and soul for your heavy tasks and that He may crown your labors by the blesing of a good harvest.

First Aid for the Peasant Farmers of Our Aleils

And now may I turn your thoughts for a few minutes to the plight of brother farmers in the devasted regions of our Allies, who have lost everything by the dreadful processes of war. Candadians and more particularly Canadian Farmers have been asked to contribute to the British Agricultural Relief of the Allies Fund. A representative Committee has charge of the campaign in Canada. His Excellency, the Governor-General is patron. The Right Honourable Sir Robert Borden and the Right Honourable Sir Wilfrid Laurier are Honorary Presidents.

A Provincial Committee under the chairmanship of Profesor Cumming and having as its members Professor W. S. Blair, Mr. S. J. Moore, officers of your association and others, has charge of the campaign in this province. Associated with them are other men of worthy public spirit. The farmers of Canada are being invited to regard February as the RELIEF MONTH FOR BROTHER FARMERS IN THE DEVASTED REGIONS. The object is to provide seeds, agricultural machinery, live stock, etc., to help the peasant farmers whose farms have been devasted by war wanton destruction by the enemy, to make a fresh start.

By the kind co-operation of the various banks, the Managers of the branches of chratered banks will receive contributions and forward them to the Honorary Treasurer of your Provincial Committee.

We all sympathize deeply with those on whom has fallen much more than theis share of the losses and havoc of war. In some places the land itself is torn beyond any posible recovery into use for growing crops. The farmers of the whole British Empire want to help these brother farmers to get on their feet as soon as they get back possession of their farms. Their houses and machinery have been destroyed. They have nothing left with which to begin farming again. We, on the other hand, have lost nothing as farmers through the war; but in some cases have made money because of the increase in prices. We ought to help our stricken brethren as soon as the enemy is pushed ont of their countries. We want to do that for several reasons. The object is humane and we are a humane people. They are our allies, our neighbors and our friends. We want to help them for the sake of the good name of Canada. It wouldu be a good thing in our international relations to have it known that the dairymen of Canada gave something, a good thing to have it known that our grain growers gave something, a good thing to have it known that our grain growers gave something, a good thing to have it known our live stock men gave something, that our poultrymen and fruit growers have given something, and above all that our country women have remembered their sisters whose farm homes have to be re-established out of ruins. We want for Canada a place among the nations, on behalf of our farmers which will be in keeping with what our sons and brothers have won on the fields of battle.

For all these reasons may I suggest that you think kindly of giving substantial aid to the Fund for these peasant farmers who have suffered. You will never miss it; it will be laid up where neither moth nor rust doth corrupt, and where thieves do not break through nor steal. It will be to your everlasting credit.

With all good wishes and confidence

Shipping space to Europe is so scarce that thousands of tons of urgently needed war supplies are held on North American docks awaiting transportation. Even though willing to pay double or treble rates, shippers cannot get their goods through.

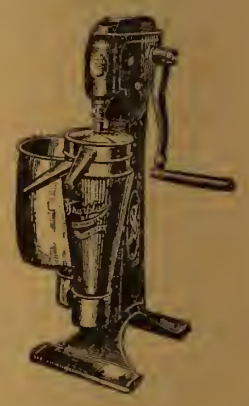
Separators Given Priority Over War Materials

A FEW weeks ago, under authority of the French government, a shipment of five hundred Sharples Suction-feed Separators was *promptly* forwarded from here to France. The very next week another order for five hundred Sharples Suction-feed Separators was received and forwarded under similar conditions.

Both shipments were given precedence en route. Munitions might wait. Even food products might wait. But this machine that *saves* butter fat wasted by every other separator or method, was placed in the very vanguard of life's necessities.

It has been said that not munitions, not even money will win the war—but fats.

The English Government recognizes this. On December 22nd, we received the largest order for Sharples Suction-feed Separators our agents there have ever given us. Immediate shipping space was provided by the English Government.



And no wonder they are achieving first place—not merely first place among separators but among economic inventions that have made North America great.

SHARPLES

The One and Only Separator

—that will skim clean at widely varying speeds.
—that gives cream of unchanging thickness—all speeds.
—that will skim your milk quicker when you turn faster.
—with just *one* piece in bowl—no discs, easiest to clean.
—with knee-low supply tank and once-a-month oiling.

Sharples is the only separator that automatically and fully prevents cream losses. No matter whether turned fast or slow, the Sharples Suction-feed principle insures clean skimming. Not less than ten pounds of butter per year for every cow is the average saving over any other separator. No wonder they want them in Europe!

See the nearest Sharples dealer at once. He probably advertises in your local paper. If you do not know his name, ask us and we will send it, together with a copy of our 50-page, old-time Song Book in appreciation of your interest. Address Dept. 79 for this information and catalog.

TORONTO, ONT. THE SHARPLES SEPARATOR CO. REGINA, SASK.

THE MITCHELL & McGREGOR HARDWARE CO., Brandon, Man.

Distributors for Manitoba

TC-1

in your response to the two objects for which I have ventured to appeal.

I am,

Your friend,

J. W. M. ROBERTSON.

The foregoing letter was referred to a committee for action. Following is their report.

Report of Committee on Dr. J. W. Robertson's Address

Your Commitee beg leave to submit the following report:

We have gone over Dr. Robertson's address very carefully and we are seriously impressed by his timely and eloquent communication and consider that our attention has been attracted to the serious condition of our brother farmers of the Allies in the devatsed area in a manner that could not possibly be done in the ordinary way of newspaper advertising. Therefore we recommend the following suggestions for your favorable consideration:

We are asked to do our utmost for greater production for National Service and while we are willing and fully resolved to do our best, we find ourselves constantly handicapped for want of suitable help on our farms and therefore we would advise this Association to memoralize the Provincial Government to assist the farmers through a Labor Commissioner to secure all the available help possible in order that we may be able to carry out our plans for greater production.

Also we find mill feeds are scarce and high in price, and liable to be scarcer on account of the new mill regulations by the Food Controller, therefore we advise some steps be taken to protect ourselves by way of securing these feeds and also the transportation of same.

With regard sto the second part of the address pertaining to the relief of our brother farmers in the devasted area of the war zone, we take pleasure in recommending that this Association express in a practical way our sympathy and interest in their very serious condition to give the fund a good start in Nova Scotia, and the amount contributed be handed over to the Commitete in charge of the fund.

We also advise that the delegates here on their return home, urge upon the executive committees of their respctive county Farmers Associatoins and Agricultural Societies to raise as large a fund as possible in their counties by an advertising campaign for this purpose.

We also want to remind you that February is regarded as the Farmers' Relief month and the work should be completed during that month.

Finally we recommend that this convention express its apreciation of Dr. Robertson's splendid and thoughtful communication.

J. HOWE COX,
S. FREEMAN,
FATER McISAAC.

PRESIDENT MURRAY'S ADDRESS AT THE N. S. F. A., TRURO

(Continued from page 192)

even if not as good as we would wish, to realize it and select the best we can out of it so as to get the very best returns we can. It certainly will all be needed.

Fertilizers are dearer than ever before and some brands not obtainable at any price, so my advice is to get what you can, if you cannnot get what you want, and get it as soon as you can so as to have it as there will be a large number of orders not filled this year.

Now, Gentlemen, at the present time in our lives there are some things talked of so much and constantly reported that they get tiresome, but the seriousness of the situation is excuse enough for the constant repetition of them. The food controllers of Canada and the United States tell us that unless we make an extra effort this present year that our enemies will have a great advantage over us and that the most serious shortage is going to be in bacon, wheat and meats of all kinds. Now if each of us only sow one bushel more of wheat this year you can scarcely grasp what it would mean to the empire. And if those of us who can will keep an extra pig to raise a litter or two of little ones we are surely doing something to help the cause along. there is also one thing more which we can do which will greatly add to our meat supply and also give a good profit in other directions and that is to have our sheep protected in a more practical manner. There was quite a good sheep and dog law passed here at our last annual convention but for lack of supoprt from those who should back it up, (that is the farmers all over the province) it did not become law. Now, gentlemen, don't you think that the time has come when we ought to get together on this subject and have something done? Would it be any serious loss to this province if there was not one dog in Nova Scotia? Would not the food which is consumed by them be put to much better use in raising pigs? Just think for one moment what a boom there would be in sheep raising if the dogs wouuld be instantly put out of existence. Well it is up to you. Now is the time to get anything in the way of protection for any branch of your industry that will help the cause along, and this is surely one of them.

Now, gentlemen. I presume that a number of you find, as I do, that you are forced back into the thick of the work owing to the scarcity of help. Those whom you figured would take up the heavy part of it are called to face the foe. Well let us do our part as well as those of our blood who are in the line and we will not blush when we sing, "God Save the King."

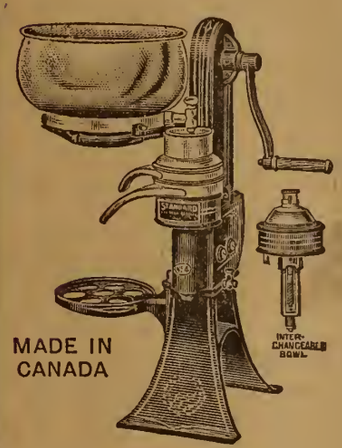
Practical Patriotism!

IN these times of national stress, the country implores the people to conserve every resource. Keeping your money investments confined to Canada is splendid patriotism, and good, sound business, too. Besides, you can easily prove to yourself that it is profitable patriotism for you to invest in the

Renfrew

—the machine that is entirely made and designed in Canada by Canadians.

The Renfrew saves one-half pound of valuable cream per cow per week over other machines. By its unequalled close skimming it gets all but one-tenth pound of butter-fat from 1000 pounds of milk skimmed, while other separators lose one-half to a whole pound.



The Renfrew's close skimming is proven by Government Dairy School tests. We are always glad to have the Renfrew tested beside any other separator, wherever made.

Send for interesting literature, describing the Renfrew self-oiling system, low supply can, interchangeable capacity and other features that are creating big demand for this made-in-Canada machine all over Canada, in the United States and other countries. Write to-day.

"The Canadian farmer hands his money to the Canadian manufacturer, who in turn pays wages to his employees. The money is then turned over to the Canadian merchant for produce bought from the Canadian farmer. Therefore money paid out by the Canadian farmer for Canadian-made machinery comes back to him in actual cash, and in the form of better markets for his produce. Money paid for foreign-made machines is immediately sent out of the country, perhaps never to return."

NOTICE: The Renfrew Separator illustrated here was formerly sold under the name "Standard", which identified it as a high efficiency cream separator. The name "Renfrew" has been used on the same machine for several years for our United States and foreign trade and under that name has become as popular in those markets as under the name "Standard" in Canada. Now the name "Renfrew" has been adopted for Canada so as to link the name more closely with that of our company and so that we can sell the machine under a uniform name throughout the world.

The Renfrew Machinery Company, Limited

Eastern Branch: Sussex, N.B. **Head Office and Works: Renfrew, Ont.**

U.S.A. Branch: Milwaukee, Wis. *Agencies Almost Everywhere in Canada.* 10

FARMERS AND DAIRYMEN HAVE INTERESTING PROGRAM

(Continued from page 171(

tle."—Prof. John M. Trueman, Agricultural College, Truro, N. S.

"Co-operation."—Rev. P.C. Gauthier P. E. .I

Discussion—By Wm. Kerr, Charlottetown and J. D. McKenna, Sussex.

Thursday, March 14th, 9.30 a. m.

General Discussion.

"Greater Production."—W. R. Reek, Secretary for Agriculture ofr N. B.

Report of Resolutions Committee.

Thursday, March 14th, 1.30 p. m.

Visit to Dominion Experimental Station.

Thursday, March 14th, 8 p. m.

Addresses by J. H. Grisdale, Director Dominion Experimental Farms, Ottawa. W. W. Hubbard, Supt. Dom. Experimental Station, Fredericton.

Friday, March 15th, 9.30 a. m.

Election of Officers.

"Agricultural Societies."—M. A. McLeod, Supt. Agricultural Societies for N. B.

Friday, March 15th, 1.30 p. m.

Seed Fair.

Discussion—Led by S. J. Moore, Truro, N. S.

If you get a grass or fruit stain on a white dress, rub it with a little parffin before sending to the wash, and the stain will come out in the boiling.

BUILDING UP THE FARM WITH LIVE STOCK AND SOIL FERTILITY TO KEEP THEM.

For a good many years it has been our ambition to build our farm up. In pursuance of this policy, I have no doubt that we have sacrificed the opportunity to save as much money as we otherwise might; the tearing down process is often most lucrative for the time being; but we have had the satisfaction, and it has been a real pleasure to us, to see the soil steadily becoming better and better as the years have come and gone.

Our way of feeding fertility into the soil has been in the main through the stock. It was not long after we came to the farm before we came to understand that the use of barnyard manure is the most natural way of giving back to old mother earth what she so lavishly bestows upon us.

Our land was strong in the first place, but through lack of good management it had been permitted to run down. So we did not keep much stock in the first place although we did plan to feed all we could from the stuff grown on the place. It often happened that we had to buy some hay and grain to get through our long winters; but we did this, feeling that in the manure we got from our stock we had in some measure a return for the money laid out that way. First and foremost the good of the farm was in our minds.

It was our plan to manure some particular field each year as heavily as

(Continued on page 190)

METALLIC
WRITE FOR PRICES
METALLIC ROOFING Co.
LIMITED
TORONTO, CANADA.
CEILING

AGRICULTURAL SOCIETIES AS A FACTOR IN GREATER PRODUCTION

(Continued from page 165)

Resolution re Gorund Limestone

"Whereas, clover is at the very "foundation of successful crop pro-"duction, and whereas, this crop is "exacting in its lime requirements "to such an extent that many of our "soils at present will not produce "profitable crops without being "limed, therefore, resolved that "the more general use of limestone "is advisable in order that clover, "which will enrich our soils in nitro-"gen from the air and potash from 'the subsoils, may be more success-"fully grown."

This, in concrete, was the result of a rally of Kings County Agriculturists under the auspices of the County Farmers' Association, held in January, 1917. You can quite readily see the additional benefits from such a meeting were these matters fully discussed by each Agricultural Society which would be the case were the delegates supposed to report back to their respective Societies.

At the Annual Meeting in December, 1917, a somewhat similar plan was followed and the subjects, after full discussion, were embodied in the following resolutions:—

First—"Whereas, the securing of "an ample seed supply of best qual-"ity, at the lowest possible rate, is "advisable in order to make possi-"ble the seeding of every available "area to crop, therefore, resolved, "that this Association recommend "a continuation of the policy adopt-"ed by the Provincial Department "of Agriculture regarding wheat "seed supply in this county in 1917, 'and further, that this policy be ex-"tended to cover oats as well."

Second—"Whereas, fertilizers are "essential if larger areas than form-"erly are to be put into crop, and "whereas owing to a scarcity of fer-"tilizers, it will be necessary to "place orders at once, therefore re-"solved that a committee be ap-"pointed to find out what supply is "available, the cost, and where it 'can be obtained."

Third — "Whereas transportation "is a big factor in obtaining neces-"sary fertilizer supplies, therefore, "we urge that fertilizers be placed "on the preferred list of freight "shipments."

Fourth—"Whereas much efficient "labour will not be available to meet 'the requirements on our farms, and "whereas we must at this time "make full use of the unskilled man, "boy and female help that can be "drawn from our towns and cities, "therefore, we urge that steps be "taken, to determine, at an early "date, what amount of this labour is "available and means devised where "by it can be efficiently mobolized "for work on the land."

Fifth—"Whereas, co-operation in "communities would make posible "the use of more improved machin-"ery at a minimum cost, and release "some efficient help thereby, there-"fore we adivse that groups of farm-"ers combine for the purpose of get-"ting gang three horse plows, seed-'ers, potato planters, potato spray-"ing outfits, etc., and thus make "possible the planting of larger "areas with the least possible help."

Sixth—"Whereas, District Repre-"sentatives, or County Agents are "utilized to great advantage through-"out the United States and in Ontar-"io in assisting farmers, through "bringing them personally into con-'tact with present requirements, "and outlining means best calculat-"ed to render their lands more pro-"ductive, and whereas a medium "such as this is necessary at present "facilitate the best distribution of "labour, thereofre, resolved that in 'our opinion steps should be taken 'to secure a district representative "for Kings County."

It is apparent that we must make use of less efficient labor than formerly, but rather then say we will not use such labor, it is a duty for us to devise means whereby it can be used. It is for our Agricultural Societies through their meetings, to encourage the use of such labor. It is for the Agricultural Societies to make more general the use of the double plow with three horses, thus doing the work of two teams and two men, with three horses and one man. Through a little organization,one such outfit could be kept steadily at plowing next spring, doing the drier areas first. The Ontario Footlift Gang with three good horses and a capable man would average 3 acres per day, and during the spring months over 100 acres of additional land could be put into crop by so combining, which under present conditions may not be possible. Possibly military horses could be secured and utilized during the spring months just for this purpose. The importance of arranging for the plowing of additional areas cannot be overestimated. As we all know, last fall was unfavorable for this work, and, unless additional provision is made for it, we cannot hope to overtake the work we should do.

Agricultural Societies can do more than any other organization in making effective the ideas as expressed above. They can determine the requirements of their district, after which steps can be taken whereby the requirements can be met most effectively.

I trust that what I have said may aid in increasing crop yields in 1918, for that is, or should be, the aim of us all at this time.

I would suggest that this Associatoin would advise that an Agricultural Rally be held in sach shire town in the Province, under the auspices of the County Associations, that delegates from each Agricultural Society be requested to attend this meeting; that the important matters of food production be discussed by the mast capable men available, and that these delegates report back to their Societies fully the matters brought up at these gatherings.

COMPARATIVE PROFIT IN THE CROPS ON A THREE YEAR ROTATION

(Experimental Forms Note)

The shorter a rotation the more labour required to work a given area and the greater should be the profit to the farmer. Three years is the shortest term in which a rotation, as generally understood, can be conducted. That is, after breaking sod only two crops are grown before hay is again the crop. The only method to follow in this rotation, if the soil is to be handled as to get the fullest benefit from its latent fertility, is to put a hoed crop of some kind on the turned down sod and by the rough cultivation during the growth of the crop, so pulverize it and impregnate it with air as to increase the solubility of the inert matter and oxidize the organic matter, thus preparing plant food and fitting the soil for not only the growing crop but those of succeeding years.

As an evidence of the extra profit to be obtained from the land under short rotation, the profits from the crops on a three-year rotation at the Experimental Station, Fredericton, N. B., may be quoted.

An old sod was ploughed in the early fall of 1913. It was harrowed and firmed down so that the sod made some progress towards decay that autumn . In the spring of 1914, the land was disced and harrowed alternately through May and until the 10th of June, when part of the land received a per acre aplication of 500 pounds of complete fertilizer of a 4-8-10 analysis and another part of an application of 1,000 pounds of the same fertilizer per acre. This was sown broadcast and harrowed in. Potatoes were planted in the drills 30 inches apart. The cost of the 500 pounds of fertilizer was $8.00 and a crop of 269.5 bushels of marketable potatoes and 22 bushels of small potatoes were raised, which that year had a market value of 50 cents per bushel for large and 20 cents per bushel for small, a total value of $134.15. The total cost of crop including fertilizer was $46.00, leaving a profit per acre of $88.15. On the portion of the field where 1.000 pounds of fertilizer was aplied the yield was 279¾ bushels per acre of marketable and 31½ bushels of small, a total crop value of $146.17, at a total cost of $54.18 leaving a profit per acre of $91.94.

In 1915, Banner oats were sown, seeded with 10 pounds Red clover and 4 pounds timothy seed per acre. The yield of oats was 52 1-3 bushels, valued at 60 cents per bushel, $31.40. The cost of raising was $10.96 per acre, a profit of $20.44. On the area where 1,000 pounds of fertilizer was applied, the yield was 45¼ bushels, affording a profit of $16.19.

In 11916 a good crop of clover grew where the 500 pounds of fertilizer was applied to the potato crop, and the yield was 2 tons 400 pounds which at $8.00 per ton was worth $17.60, cost of harvesting was $5.50. A small crop of clover seed was taken off the second growth of clover, amounting to 40 pounds which at 20 cents per pound made $8.00; the cost of harvesting and threshing was $4.00, this left a net profit from the clover crop of $16.00 per acre. On the area where 1,000 pounds of fertilizer was applied the yield of hay was 2 tons 1520 pounds and from this area the net profit per acre was, therefore, $19.18.

To recapitulate; the potato crop gave a profit with 500 pounds fertilizer of $$88.15, with 1,000 pounds fertilizer $91.94. The oat crop where 500 pounds fertilizer was applied to the potato crop, gave a profit of $20.44 per acre; where 1,000 pounds fertilizer was applied the profit was $16.19.

The clover crop where 500 pounds fertilizer was applied two years before, gave a profit of $16.10 per acre and where 1,000 pounds fertilizer was used a profit of $19.18.

CLEANING THE MILKING MACHINE

The pail can be kept clean in the same way that any milk pail is kept clean. Steam or scald it and dry it out thoroughly. Rubber parts cannot be kept clean in this way and they should be kept in a disinfectant solution. Various germicides have been tried out for the purpose and several of them are useful. Very few have been tried out thoroughly enough to justify recommending them. The one which the New York experiment station has found to be the most useful

CLEANER and BETTER FRUIT
Result from Spraying

If you have trouble in selling your apples or other fruit at good prices, because they have been shabby, wormy and distorted why not insure through spraying by using a

Spramotor
It isn't a SPRAMOTOR unless we made it

Thorough spraying will enable you (under normal conditions) to produce at least 75 No. 1 fruit and at the same time improve the condition of the trees.
The Spramotor has demonstrated its superiority in performance and build. There is a machine suited to your particular needs—hand or power. Prices from $7 to $400.

Made In Canada. No duty to pay.
Write today for furher information and Free illustrated booklet on crop diseases.
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We Keep the Quality Up

It is one thing to make flour that is occasionally good.
It is quite another thing to make flour that is ALWAYS good.

PURITY FLOUR

Never disappoints. Whether you buy one barrel or a hundred the quality is ALWAYS the same and makes

More Bread and Better Bread---and Better Pastry, too.

and which will give satisfaction if directions are followed is ordinary chloride of lime (bleaching powder) purchasable at any drug store.

Preparation of Disinfectant Solution

Do not buy more than one or two 12ounce cans of chloride of lime at any time and do not accept any in broken or rusted packages, or any that is moist. It should be a dry powder if it is fresh and of good strength. Prepare a stock solution by adding all of the powder in a can to a gallon of water in a pitcher or tall glass jar. This will give you a greenish colored liquid with a heavy, white sediment of lime.

Fill a second crock holding 20 to 30 gallons with water and add one pint of the stock solution to this twice a week. Double this puantity will do no harm. The solution in the big crock loses strength quickly on using, and in a few days will become useless if the new chlroide is not added.

It is advisable to add enough salt to the crock to make a strong brine, as this keeps the solution from freezin gin cold weather, and brine is of itself a good solution in which to keep the teat cups. The salt, however, is not necesary if attention is given to keeping up the strength of the chloride solution. This solution may be used indefinitely if its strength is maintained by adding fresh chloride of lime solution as directed.

Procedure for Cleaning

Immediately after each milking prepare three pails. Fill Pail 1 with clean cold water, Pail 2 with hot sal soda water, and Pail 3 with clean hot water. While the teat cups are still attached to the machine immerse them in these pails successively at the same time sucking the water through them. Then take the teat cups and stanchion hose and either suspend them or immerse them in the solution in the large crock.

Care should be taken when putting the tubes into the solution to make sure that the air bubbles are out of the tubes and that they are completely immersed. Neither rubber nor properly made metal parts are injured by the solution recommended.

Once a week the rubber teat cups should be taken apart completely and each part thoroughly cleaned. No disinfecting solution will take the place of cleaning.

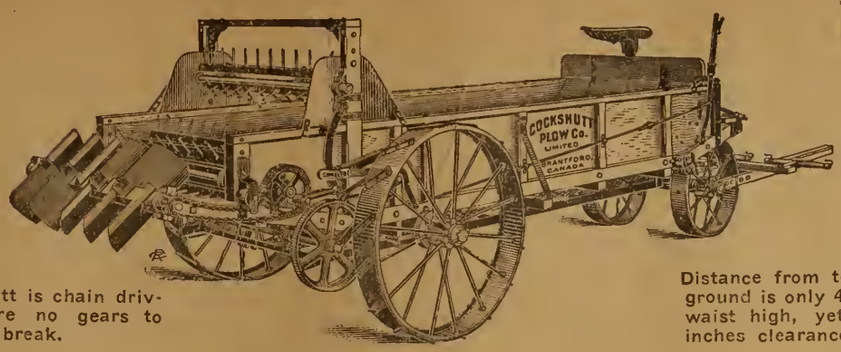
Care of the Teat Cups

Just before beginning to milk, suck a pail of clean water, either hot or cold, through all of the teat cups, otherwise traces of the disinfectant may be carried over into the milk. Even if this does happen an dtraces are carried over, harmless compounds are formed like some already present in the milk. The action is such that it would be necessary to add large quantities of the disinfectant if anyone should attempt to use it fraudulently as a preservative in milk. If this is done the milk has such an unpleasant odor and taste that it is unsalable. Chloride of lime is also a very valuable disinfectant for use in caring for unfiltered city water supplies and large quantities of it are used in this way.

A little granulated charcoal mixed in the soft food will generally check bowel trouble in chicks.

When the Indian Runner duck has reached a marketable age, she has nearly completed her growth, and has little left to do but complete her plumage and begin to lay.

Too much use of cayenne pepper has caused considerable trouble among poultry keepers and so has overfeeding. The former brings on liver troubles, and the latter leads first to indigestion, then fever, and gangrene of the intestines; or inflammation of the mucous membrane, which is cattarh or croup; or anthrax, whihc is black comb; and other fatal disorganizations of the muscular tisues of the liver.



The Cockshutt is chain driven—there are no gears to freeze up or break.

Distance from top of box to ground is only 41 inches, just waist high, yet there is 17 inches clearance underneath.

Cockshutt Manure Spreader

Barnyard fertilizer is more than ever important now when so much production is wanted and commercial fertilizer is so scarce. Hence you want a manure spreader—one that will have ample strength to stand up under years of hard service—yet won't be heavy on the horses—and one that will really "spread," not merely dump the manure in patches. In other words, you want a Cockshutt Manure Spreader.

Built of malleable iron and steel wherever possible to save weight and add strength. The drive is by chain—the strongest known. The bottom of the box is stationary, there are no slats, aprons or rollers to become fouled and broken; the carrier consists of heavy steel angles held together by chains,—simple and effective.

The distributing cylinders and paddles pulverize and spread the manure better than you could do it by hand. Easy lever at driver's hand throws mechanism in or out of gear. In two sizes, 50 or 65 bushels.

Special Cockshutt Manure Spreader booklet gladly sent on request

THE FROST & WOOD COMPANY, Limited

Truro ST. JOHN, N. B. Charlottetown

No Matter

WHAT YOU REQUIRE IN

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BUILDERS', MILL,
MACHINISTS', PLUMBING,
AUTOMOBILE and
MOTOR BOAT SUPPLIES

PUMPS, BRASS and IRON GOODS

FOR STEAM AND WATER

We Have It

CUTLERY A SPECIALTY

MAIL ORDERS GIVEN PROMPT ATTENTION

T. McAVITY & SONS, Ltd.

ST. JOHN - New Brunswick

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co.. N. B

Ayrshire Cattle

C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

Shorthorn Cattle.

Walter E. Eaton, Upper Cunard, Kings Co., N.S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Spruce Grove Farm Guernseys

FOR SALE—Four Bulls fit for service also some Yearling Heifers and a few Bull Calves.

D. C. McKAY & SON,
SCOTSBURN, - - Nova Scotia

Newburn Hill Stock Farm

Our present offering is one pure bred Shorthorn Bull, 11 months of age, also a few Heifers from one to three years of age. All of good milking qualities.
Beef, Hay and Potatoes in car lots.
Choice Cultivated Strawberries a specialty
FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
UPPER SACKVILLE, N. B.

Firshade Farm R.O.P. Shorthorns

Present offering, 2 Bull Calves, One Heifer, three years old.

P. R. L. FAIRWEATHER,
Rothesay - - - N. B.

FOR SALE

A handsome, well-grown Guernsey bull. Sire purchased from the Experimental Farm, Ottawa; dam of equally good breeding, and a heavy producer. Will be sold reasonable. Full particulars on inquiry.

SARAH E. MOSES SMITH,
Woodwards Cove, - - - N. B.

Willow Glen Shorthorns!

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

Springbrook Farm Ayrshires!

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

McINTYRE BROS.
SUSSEX, - - N. B.

Advertise in the FARMER

BUILDING UP THE FARM WITH LIVE STOCK AND SOIL FERTILLIZER TO KEEP THEM

(Continued from page 187)

we could and grow corn or potatoes on it. With some of the manure still locked up in the eatrh we ploughed that field the fall after the corn crop was taken off and the next spring we seeded it to oats, with clover and timothy as a cover crop.

We rarely failed to get a good crop of oats and usually a fine stand of clover and timothy. At first we did not have the manure we would have liked to use but since we had been keeping more cows, we have felt it good economy to give the new seeding a good top dressing, if possible in the fall or early winter. As a rule we have cut fine crops of hay from new meadows treated this way.

As we have learned that we ought not to leave fields handled this way too long in grass; by following a short crop rotation, we get ont a little fertility from the clover and timothy roots, while the grass aftermath itself adds considerable goodness to the soil One field underway, we take up another the following year and so on in successoin. In this way we have greatl increased the capacity of our farm for producing corn, oats and especially hay. In this last mentioned crop we have done particularly well. We are now cuting twice as much hay to the acre as we did in the beginning.

Each year we are growing more and more corn, not simply silage corn, but also flint corn to be ground or fed whole. To help about this we have put up a silo about fourteen across and thirty feet high. The ensilage is all fed in the barn, which has expanded two or three times its original size, and is now too small for the demands upon it. As suggested a moment ago, our herd of cows has increased five or six times over the first few kept. We have now thirty head, young and old, as against the three we had when we first came on the farm.

Of course I know that by selling off the crops grown on the place, we might have had more ready money. But we have thought it best to leave the head of the goose on the neck, believing that itis better worth while to make the soil of the farm richer rather than to gather in a few dollars more for the rainy day that may never come. We have seen some of our neighbors trying off the stock and depending on selling hay for their revenue and if followed very long this always has resulted in poor, run-down land and dilapidated buildings. That is the natural consequnce of such a policy.

We have learned that barnyard manure is not a complete form of soil fertility. It lacks some things that the land needs. Those elements have been extracted in the process of feeding. To make up for this we have for some time been using some form of commercial fertilizer. Not a agreat deal has been necessary with us. but we have gotten good results from a light dressing of lime or acid phosphate or both. This we have been able to get at a low figure, and by using some when we seed the land to oats as described above. we have been successful in correcting any acidity that might otherwise have been noticeable in th soil as the result of using manure and green stuff as our chief forms of fertilizer.

Not the least of our returns from this plan of making the farm better has been the satisfaction we have had in seeing the soil grow steadily in productiveness. How any man can be contented to feel that through the work of his own hands his farm has been growing poorer year after year so that when the time comes to lay down his work he wil have ony a wornout place to pass on to his children or to somebody else is more than I can understand. What finer legacy can any of us make to oncoming generations than a good, well kept farm? That is one way we may all help to make the world better.—E. L. VINCENT.

NOVA SCOTIA FARMERS ASSOCIATION DIRECTORS' REPORT FOR 1917

The 2nd report of the Directors' of this Association will not be an extended one as the subjects that would naturally appear in it wil be fully discussed during the Convention.

Nova Scotia as part of thsi great Dominion has been called upon to put further efforts out to help win the war, both with men and food; in both of these she has not fallen down, but more will be needed before final victory. The farmers of the Province must be prepared to do even more and under harder circumstances, the growing scarcity of feeds, fertilizers, seeds and labor. This Convention should most seriously consider these phases with a view to keeping up with and even increasing production.

We were to have met in the Capital of the Province, but as you know the terrible catastrophe that happened that city put that out of the question, so it was decided to meet here, the centre of our Agricultural Education.

The Exhibition Buildings and the grounds were within the devasted area and suffered badly. Probably the Exhibition will not be held again for two years, your representatives on that Commission can more fully inform you as to this.

The program for these meetings has been printed and distributed, the subjects found thereon will be open for full discusion, and others may be brought up, but your directors urgently ask that any resolutions members wish passed at this convention be put in writing and handed in early so that place can be found for their introduction and full discussion.

The financial standing of the Association is good, as can be seen by the following statement, which has been duly audited and found correct by your Auditors, Prof. Trueman and Mr. Landry.

Financial Statement

Credit	
Balance Jan. 1, 1917.....	$ 251.48
Prov. Gov. Grant.....	800.00
Delegates Fees.....	71.00
Membership Fees.....	15.00
	$1137.98
Dr.	
Annual Meeting Expenses....	$ 663.05
Directors Expenses.....	64.15
Secretarys Salary.....	150.00
Legislative Com. Expenses...	16.75
Postaoge, Telegrams, etc.....	11.37
Stationery and Printing.....	9.75
Balance Dec. 31, 1918.....	222.91
	$1137.98

WM. MURRAY, President.
SAMUEL FREEMAN, Vive-Pres.
CHAS. R.B. BRYAN, Secty-Treas.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on. as we cannot forward replies sent to this offiice. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE—White Russian Seed Wheat, extra good quality. Price $3.00 per bushel.—R. O'LEARY, Richibucto, N. B.

FOR IMMEDIATE SALE—pure bred Shorthorn bull, four years old, perfectly quie , good milking strain. HERBERT COCHRAN, Bloomfield St tion, N. B.

LADIES WANTED to do plain and light sewing at home, whole or spare time; good pay; work sent any distance, charges paid. Send stamp for particulars.—NATIONAL MANUFACTURING CO., Montreal.

CANADIAN POULTRY REVIEW, 41st year of publication. Bigger and better than ever. Departments conducted by specialists. Seventy-five cents year, two years one dollar. Sample free. 184 Adelaide St West, Toronto, Ont.

POSITION WANTED—Married couple desires position on farm, no encumbrance. Open for engagement April 1st, 1918. Dairy or mixed farming. Best of references Apply to A B., Box 373, Maritime Farmer Office, Sussex, N. B.

FOR SALE—Bargain Clydesdales. FannyParks Imp. (31861) (34631), excellent brood mare, age 6; Royal Lilly (36977), age 3 in June. Choice pair, perfectly sound.—WM. B. LYNCH, Lower Truro, Nova Scotia.

BARRED PLYMOUTH ROCKS
S. C. BROWN LEGHORNS

Twelve out of thirteen firsts competed for at Fredericton and Moncton, January, 1918. Some fine stock of both varieties for sale, including first prize Brown Leghorn cockerel.

H. M. McMONAGLE,
FREDERICTON, - - N. B.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Snubenacadie - - - N. S.

Whitewash stains on white linen will disappear if soakked in vinegar.

When packing bottles rubber bands slipped over them will prevent breakage.

Add a little drop of salad oil to mustard when it is being made. Not only will it improve the taste but iit will keep fresh for days.

In peeling onions place them so that water covers the onion, to prevent the eyes from smarting.

STRAWBERRY PLANTS!

We again offer to the strawberry growers of the Maritime Provinces a wide range in varieties of well grown, true to name strawberry plants. We have Senator Dunlaps, Glen Mary, Haverland, Bubach, Buster, Sample, Arnout, Wm. Belt, Warfield Williams, Dr. Burrell, Early Jersey Giant, Kellogg's Prize, Kellogg's Premier, Portia, Progressive and Frances.

Write for our free Catalogue with description of varieties and price list.

CYRUS & MANNING ELLS
Port Williams - - Nova Scotia

FOR SALE!

We have for sale a breedy, growthy bunch of young Shorthorn bulls, different ages, most of them are bred very strongly along milking lines, yet they would be a credit to any beef herd.
would be a credit to any beef herd.

We are booking orders for spring delivery of our large English Berkshire young pigs. Not the short chubby type, but the lengthy, growthy and large.

L. M. ANDERSON, Sackville, N. B.

THE BEST VARIETIES OF VEGETABLES

(Experimental Farms Note)

Owing to the scarcity of seed of many varieties of vegetables this year it will not always be possible to get those which are desired, hence the importance of ordering early in order to make sure of getting at least some of the best sorts. In the following list based on tests made at the experimental farms and stations in Canada, several variieties of almost equal merit of some kinds of vegetables are suggested so that if it is not possible to get one it may be possible to get the other.

Beans.—(Round Pod Wax) Round Pod Kidney Wax, Pencil Rod and Brittle Wax; (Flat Pod Wax), Wardwell Kidney Wax, early, and Hodson Wax, late; (Green Pod), Stringless Green Pod, and Early Red Valentine, early, and Refuge or 1000 to 1, late. Lima and Pole beans ar enot very satisfactory except where the season is long and warm. The bush varieties of Lima are the most satisfactory. Scarlet Runner is the most reliable Pole bean but Kentucky Wonder is one of the best in uqality.

Beets—Crosby Egyptian, Detroit Dark Red, and Early Model.

Borecole or Kale—Dwarf Green Curled Scotch.

Brussels Sprouts.—Improved Dwarf. The Dwarf varieties have been found more satisfactory than the tall ones.

Cabbage—Early Jersey Wekefield, Copehagen Market, early; Succession, medium; and Daniish Ballhead and Drumhead Savoy, late; and Red Dutch red.

Cauliflower—Early Snowball and Early Dwarf Erfurt.

Carrot—Chantenay, Danvers Half Long, Early Scarlet Horn for extra early.

Celery — Golden Self Blanching (Paris Golden Yellow) early; Winter Queen, Evans Triumph, and Perfection Heartwell, late; White Plume for coolest parts.

Corn—(Extra early), Early Malcolm Malakoff and Peep O'Day; (early), Golden Bantam; (medium), Early Evergreen or Black Mexican; (late), Country Gentleman and Stowells Evergreen; Squaw for coolest parts.

Cucumber—Davis Perfect, White Spine, and Chicago Pickling.

Egg Plant—New York Improved, Long Purple, and Black Beauty.

Lettuce—Grand Rapids and Black Seeded Simpson (early loose curled), Iceburg, Giant Crystal Head, Improved Hanson, Salamander, All Heart, and Crisp as Ice (head or cabbage).

Melons — Musk. (Nutmeg type), Long Island Beauty, Hackensack and Montreal Market; (yellow fleshed) Emerald Gem, Hoodoo and Paul Rose.

Melons—Water. Cole Early, Ice Cream, and Phinney Early.

Onions—Yellow Globe Danvers and Early Red Wethersfield. Prize Taker especially for transplanting. Early Flat Red and Australian Brown are good where the season i short. Dutch sets ensure a crop in a short season when, if grown from seed, the onions may not mature.

Parsley.—Double Curled.

Parsnip—Hollow Crown of a good strain is the best. Intermediate is also good.

Pepper—Early Neopolitan of the large varieties and Cayenne, Chili and Cardinal of the small ones.

Peas—(Extra early) Gregory Surprise; (early) Thos. Laxton, Gradus, Nott Excelsior, American Wonder, and Sutton Early Giant; (second early) Sutton Excelsior and Premium Gem; (medium to late) McLean Advancer, Heroine and Stratagem; (tall late sorts) Telephone, Champion of England and Quite Content.

Radihs—Scarlet White Tipped Turnip, Rosy Gem, and White Icicle.

Salsify—Long Whiite, Sandwich Islands.

Spinach—Victoria, Thickleaved, Viroflayed.

Squash—Long White Bush, Summer Crookneck; late, Delicious, Hubbard.

Tomatoes—(Extra early) Alacrity, Sparks Earliana; (early and main crop) Bonny Best, Chalks Early Jewel. Later good sorts are Matchless and Trophy (scarlet), and Livingstone Globe and Plentiful (purplish pink). Ignotum for canning.

Swede Turnips—Champion Purple Top.

Potatoes—(Early) Irish Cobbler or Eureka Extra Eearly; (main crop) Green Mountain, Gold Coin, Wee MacGregor, Carman No. 1. Early Ohio is a good extra early pink sort but is not very productive.

POTATO SPRAYING DEMONSTRATIONS IN 1917 AT THE CHARLOTTETOWN EXPERIMENTAL STATION

During the early summer of 1917, several makes of potato spraying machines were secured for experiments at the Charlottetown Experimental Station. A contest was arranged, and the dates on which the several sprayings would be applied were advertised in the local papers. A number of interested men attended practically every demonstration. On the 2t8h of August, 1,300 people visited the Station, and the majority went to the potato field to see the work of of the different machines. Late blight occurred in many parts of the Province early in the season, and the check plots that were not sprayed at this Station showed very plainly htat quite a bad attack of the disease was present.

The contest was carired on in duplicate with Green Mountain potatoes. Four applications were made to each plot. The total cost of applying the bluestone and lime includes the cost of both man and horse labour. Unsprayed check rows were left at intervals throughout the field for purposes of comparison. Long before potato digging time, anyone could pick out these by their dead, diisease-infected tops. The following results were obtained:

(1) A four-row, horse-power machine with one nozzle spraying down from the top and one on either side of the row, applied 80 gallons of 4-4-40 Bordeaux to the acre, at a cost of $1.65 per application without poison. The plots yielded at the rate of 194 bushels of marketable potatoes, or 52 bushels more marketable potatoes thaan the corresponding unsprayed check, giving a net gain over the total cost of spraying of $32.40 per acre.

(2) A four-row horse-power machine with one nozzle spraying down on the foilage of each row, applied 35 gallons of the same Bordeaux per acre, at a cost of 80c per application. These plots yielded at the rate of 166 bushels of marketable potatoes, or 24 bushels more of saleable potatoes than the corresponding check, giving a net gain over the cost of spraying of $14.80 per acre.

(3) A four-row hand machine with one nozzle spraying down, and one nozzle spraying through from the side applied 40 gallons of the same Bordeaux at a cost of $1.00 per application, per acre. These plots yielded at the rate of 171 bushels of marketable potatoes, or 51 bushels more saleable potatoes than the corresponding check giving a net gain, after deducting the total cost of spraying, of $35.00 per acre.

(4) A four-row hand machine with one nozzle spraying down on each row applied 26 gallons of the same Bordeaux at a cost of 70c per application. These plots yeilded at the rate of 138 bushels of marketable potatoes, or 19 bushels more saleable potaotoes than the corresponding check, giving a net gain after deducting the total cost of spraying, of $11.45 per acre. Marketable potatoes were valued at 75c per bushel. The above contest clearly demonstratees the advantage of thorough spraying, and the necessity of spraying the 1918 crop.

CARE OF MILK CANS

Milk cans are necessary in shipping milk and cream, and such cans are all tinned. This protective coating of the steel plate is necessary to make the cans rust-proof, smooth and easily cleaned—an essential feature if milk is to be delivered in wholesome condition.

The supply of tin is so short that new cans are almost unobtainable, the recent recommended practice of retinning is uncertain of continuance, and even solder for repair work is hard to get. Therefore, all cans should be handled with the greatest care so that they may be kept in service for the maximum period of safe use; and all idle usable cans should be utilized.

WHY build with inflammable wood when you can get fireproof, weather-proof and lightning proof "Metallic" building materials. They are far cheaper in the end. "Empire" Corrugated Iron Siding is easily and quickly laid and makes a strong, rigid wall. Its light weight makes heavy construction unnecessary.

"Eastlake" Galvanized Shingles, coupled with "Halitus" Ventilators and "Acheson" Roof Lights make a perfect roof. "Metallic" building materials defy the elements. "Eastlake" roofs laid over thirty years ago are good to-day.

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Before buying any building materials write us for Booklet and complete information. We can save you money.

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VICTORY Bonds have so many attractive features they may properly be called the National Investment.

The assets behind Victory Bonds comprise every inch of territory, every farm and forest, every lake, railway, factory; in fact EVERYTHING in Canada is pledged for the payment of interest and principal of Victory Bonds.

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Unquestionably Victory Bonds are the best investment right now for everybody. Their value will increase considerably at the first definite signs of peace.

If there is any information you would like to have about Victory Bonds or any other security, write to-day to the Secretary of the Montreal Stock Exchange.

The form below is provided for your convenience. Fill it in NOW. It will bring you valuable information on Investing that you should have.

MONTREAL STOCK EXCHANGE

To the Secretary of the Montreal Stock Exchange,
Room 528, Stock Exchange Building, Montreal.
Without obligation, please send me your Book on Investing, also information regarding the market for Victory Bonds.

Name.....

Address.....

A SIGNIFICANT ANNOUNCEMENT

The announcement that letters patent have been granted The Empire Cream Separator Company of Canada. Limited, increasing their authorized capital from $300,000 to $1,000,000 is significant both of the remarkable strides made by this company within recent years and of the growing demand for the class of product which they manufacture.

The war has played ducks and drakes with pre-war theories and methods. It has been instrumental in establishing new standards of morals, of which not the least has had to do with economy and thrift. It has necessitated the use of every scientific short cut known, previous to its outbreak, and has forced the blazing of countless new ones.

In no department of applied science has this been more true than in that which has to do with labor saving devices. The constant drain upon the man power of the various nations engaged, has hastened the development and spread the use of countless mechanical substitutes for human effort, while rolling away the clouds of prejudice which had previously hindered their general adoption.

Among these the milking machine may be said to occupy a prominent place. Milking machines have taken the place of thousands who are today fighting in the trenches of Europe. They are obtaining more milk, cleaner milk, with less injury to the cows, than if these dairymen-soldiers had remained at home.

The Empire Cream Separator Company are the manufacturers of the Empire Milking Machine, which has met with phenomenal success throughout the Dominion. This is the machine which milks the champion four year old, Fancher Fram Maxie, and which has been installed as permanent equipment at MacDonald College and the Nova Scotia College of Agriculture at Truro.

The Empire Milking Machine is now a purely Canadian product. This fact added to the announcement of the proposed increase in the capital of the Company and the growing demand for milking machine equipment constitute one of the most interesting series of developments, from the standpoint of the Canadian agriculturist, that the war has produced to date.

TO PREVENT COW KICKING

Subscriber, Clover Bar, Alta., writes: "In your issue of Nov. 22 there is an article on "Breaking in the Heifers," which refers to the tying of a kicking heifer's feet. This should never be done, as there is a very simple method of taming either an ugly tempered or a nervous heifer or cow. Never since we have used this method have we had occasion to tie a cow's feet. We use a piece of clothes line doubled; put it around the cow in front of the udder and cinched up fairly tight. She may try to kick once but she never does again."

DANGER OF GASOLINE IN GARAGES

The increasing use of the automobile has caused many out-buildings to be converted into garages. This conversion, in many cases, carries with it the storage of more or less gasoline. This storage is highly dangerous, and constitutes a risk, not only to the garage itself, but to adjoining property. Gasoline will give off 130 times its bulk in vapor, and ,when vaporised, will convert 1,560 times its volume of air into an explosive mixture, which will ignite from a blaze or spark. Five gallons of gasoline will generate 8,000 cubic feet of gas, or enough to fill a room 20 by 40 feet and 10 feet high. When ignited, it immediately expands to 4,000 times that space. Gasoline should be stored in underground tanks if possible. It should not be kept in drums in the garage where it is a menace to life and property.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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Handling the Flock During Lambing Period

By Prof. C. W. Coffey, Professor of Sheep Husbandry, Urbania, Ill. College of Agriculture

This following article is intended primarily for boys and girls in lamb clubs and for those who have not had experience with sheep during lambing time. It may, however, contain a few suggestions which experienced sheepmen can use to advantage. Many handle their flocks successfully without providing themselves with all the equipment and supplies listed herein, but everything mentioned has been successfully employed in saving eiither lambs or their mothers. It is also true that many sheepmen carry their flocks through the lambing period and experience few if any of the ewe and lamb troubles discussed in this connection; the fact that the troubles are discussed should not discourage anyone who is thinking of raising sheep.

In Preparing for Lambing

(a) Plan the farm work so that the shepherd can keep a close watch over the flock both day and night.

(b) Keep the ewes that are about due to lamb away from the other kinds of live stock. Large animals may injure them; hogs greedily devour young lambs.

(c) In cold weather provide warm quarters, well bedded and exposed to the sun, but do not overlook ventilation. Give the ewes plenty of room (12 to16 square feet each, unless closer crowding is necessary in order to keep the quarters warm.) Close all openings through which young lambs might creep and wander away.

(d) Have a few portable lambing pens, 4 x 4 feet or 4 feet x 6 feet. (Such a pen is the best place for a ewe and her lamb until the lamb is two or three days old.)

(e) Certain supplies should be on hand, such as:

1. Liquid sheep dip to be used as a disinfectant.
2. Epsom salts, castor oil, and raw linseed oil to be used as physic.
3. Tincture of iron, gentian and ginger to be used as a tonic.
4. Soap to place in water intended for injections to relieve constipation.
5. Tincture of iodine to be used on swollen udders an on navel cords to prevent "navel ill."
6. Swan-bill nipples for feeding milk to young lambs.
7. A metal syringe provided with a large nozzzle and also a small one suitable for giving injections to young lambs.
8. A glass graduate for measuring doses of medicine.

Caring for the Ewe

During the last few days before lambing, pen the ewe at night where it is intended she shall be until the lamb is a few days old. Avoid crowding and jamming in doorways and around feed racks. Give good, clean, palatable feed, consistinig mainly of roughage.

When the ewe is giving birth to the lamb do not disturb her so long as everything seems to be going well. If she must have help (which she should have if little or no progress is being made after much laboring), the first thing to do is to learn what position the lamb is in. To be delivered alive, it should be presented fore feet first, with the nose lying snug on the fore feet (this is the normal position for birth), or it may be delivered hind legs first. Before entering the ewe to get the lamb into the proper position, the hand should be disinfected and smeared with vaseline or oil. Care should be used not to tear the parts of the ewe, and it may be inadvisable for a person with a large hand to attempt the operation. Pull steadily on the lamb slightly downward toward the ewe's udder and use most strength in pulling when the ewe labors. Be sure to keep the head coming with the fore feet until the nose is exposed.

After the lamb is born give the ewe close attention for several days. Note whether she casts the placenta (afterbirth) and whether her bowels are normal. Watch her udder. Milk her if the lamb does not take all of the milk. Do not expose her to cold drafts. Give her all the water she wants but not large quantities at one time and it should not be ice cold. Give her good feed, ,such as clover hay and oats; allow grain sparingly for two or three days after the lamb is born, unless she is in thin condition.

After the lamb is a week old the ewe must have plenty of feed until there is an abundance of grass; and abrupt changes in her ration should be avoided.

Do not worry if the ewe refuses to eat for the first three to six hours after lambing, but if she continues to refuse feed, make sure that her bowels are in good condition. Four ounces (one-third pint) of raw linseed oil, or 4 or 5 ounces of Epsom salts dissolved in water, is a good physic. For a very quick acting physic, 2 ounces (4 tablespoonfuls) of raw linseed oil with 4 ounces of Epsom salts may be used. To aid the appetite, give three times daily a teaspoon each of tincture of gentian and giniger in one-half pint of luke-warm water. If the ewe is in thin iflesh, add a teaspoonful of the tincture of iron to each dose.

A ewe lacerated inwardly or failing to fully cast the after-birth after lambing, should be washed out daily with injections of boiled water that has been allowed to cool, ,or with a liquid dip diluted 1 part to 100 parts of water.

When the ewe's udder is swollen keep it milked out and paint it twice a day with tinsture of iodine until the swelling begins to go down,, and there after paint it once a day until it is evident that further treatment is unnecessary. If pus forms, make an opening for drainage and wash the affected part once a day with a good disinfectant. Ewes with swollen udders should be removed to comfortable quarters outside the sheep barn, for their trouble may be caused by an affection that will spread through the flock. Since their milk is often poisonous their lambs should be taken away from them and fed by hand until the swelling subsides. Be sure not to let the lambs unrse from other ewes, for this may spread the disease.

Sore teats in ewes are most often caused by the formation of poc-like sores, but sometimes by the long, sharp teeth of the lamb. The first symptom of the poc sore is a whitish pimple or blister. As soon as the sores are discovered, they should be opened and washed twice a day with a solution of sheep dip, one part to twenty-five parts of water. If the lamb's teeth make the teats sore, about the only thing to do is to take the lamb away from the ewe. When the teats are very sore the ewe refuses to let the lamb nurse; hence the shepherd should see to it that she is kept milked out.

Caring for the Lamb

When the lamb is born place it and the ewe in a pen measuring 4 feet x 4 feet, or 4 feet x 6 feea. Little attention need be given the strong lamb whose mother has milk, except to see that it finds the teat. If its mother has no milk, it is best at first to take a little from an ewe that has more than enough for her lamb. The next best thing to do is to feed whole cow's milk, using about two tablespoons every two or three hours. The milk should be heated about 90°F. in a bottle placed in warm water. In order t ogive the milk at proper temperature, the bottle and the water should be in a pail which can be taken to the place where the lamb is to be fed.

A lamb too weak to stand to nurse should get a fill of its mother's milk as soon as possible. If it is anxious to nurse back the ewe into a corner and hold the lamb to the teat and increase its anxiiety to feed by patting it on the rump. If it refues to nurse, draw some milk rfom the ewe and feed the lamb from a bottle until it gains strength and develops a strong appetite.

One of the best ways to handle a chilled lamb is to place all but its head in as warm water as the elbow can bear. As the water cools put in more warm water to keep up the temperature. When the lamb becomes somewhat lively, take it out of the bath, and rub it briskly with a coarse cloth until it is almost dry. Then feed it, wrap all but its nose in a thick blanket or cloth, anad place it in a warm place to sleep. Keep it away from its mother no longer than absolutely necessary. Always wrap a lamb in a cloth when placing it in artifically heated quarters.

When the ewe disowns her lamb try to get her to claim it. A ewe recognizes her lamb at first wholly by smell. This being the case, it may help to smear on her nose and on the rump of the disowned lamb some milk drawn from the ewe. Another procedure is to tie the ewe in a small pen where it is easy to hold her and force her to let the lamb nurse often and being tied, it is difficult for her to get away from it. When the disowned lamb is one o a pair of twins, both lambs sould be placed in a pen next that occupied by the ewe so that she cana see them, and both should always be put with her at the same time. In her anxiety to nurse the lamb she claims, she is likely to let the other one nurse also.

If a ewe with a good suppiy of milk is left without a lamb, an attempt should be made to have her raise one, an orphan or one not getting enough milk from its mother. If she has just lost a lamb, it is usually easy to get her to take another by immediately removing the skin of the dead lamb and placing it on the stranger intended for her. If this proceeding is not possible for suggestions given above for getting a ewe to claim her own lamb may be employed.

Common Ailments and Diseases of Young Lambs

"Pinning" is a collection of sticky dung clinging to the wool around the anus. It should be scraped away with a stick or corn cob.

Constipation is indicated by straining and distress in the attempt to pass feces, or dung. Injections of lukewarm soapy water should be given, and it will help if a tablespoon of castor oil o rmilk of magnesia (hydroxid of magnesia) is given.

White Scours in lambs are caused by digestive disorders which usually result from mistakes in feeding the ewe, and hence are to be avoided largely by giving the ewe clean wholesome feed and not changing the ration abruptly. A lamb having white scours should be taken away from the ewe and allowed only a little of the milk. This can best be accomplished by milking the ewe out before letting the lamb nurse. Milk of magnesia given as suggested for constipation will help correct the disorder.

(Continued on page 332)

Beekeeping and Honey Production in N.B.

Opportunities for Development of the Industry

By L. T. Floyd, Provincial Apiarist, N. B.

Honey as a Food

Honey is one of nature's best foods. It is only within the last few centuries that sugar has become known, and only within the last generation that refined sugars have become so low in price that they may be comonly used in the poorest families. Formerly honey was the principal sweet, and it was highly valued three thousand years before the firs tsugar refinery was built.

It would add greatly to the health of the present generation if honey could be at least partially restored to its former place as a comon article of diet. The almost universal craving for sweets of some kind shows a real need of the system in that direction; but this excessive use of sugar brings in its train a long list of ills. When cane sugar is taken inito the stomach it canot be assimilated until first changed by digestion into grape sugar. Only too often the overtaxed stomach fails to properly perform this digestion, then comes sour stomach and various dyspeptis phases.

In honey we have a sweet that needs no further digestion, as it has been prepared fully by the bees, for prompt assimilation without taxing stomach or kidneys. As Prof. Cook says: "There can be no doubt but that in eating honey our digestive machinery is saved work that it would have to perform if we ate cane sugar; and in case it is overworked and feeble this may be just the respite that will save from brekdown." A. I. Root says: "Many people who canont eat sugar without having unpleasant symptoms follow will find by careful test that they can eat good well-ripened honey without any difficulty at all."

Not only is honey the most wholesome of all sweets, but it is the most delicious, and its cost so moderate that it might well find a place on the tables of the common people every day in the week. Indeed, in many cases it would be a matter of economy to lessen the butter bill by letting honey, in part, take its place. One pound of honey will go as far as a puond of butter; and if both articles be of the best quality the honey will cost only half as much.

Bees Essential to Fruit Growers

Scientists tell us that insects were created for the purpose of carrying the pollen from flower to flower. Some flowers are sterile to their own pollen as in some variieties of strawberries. It is a well known fact that if we plant such varieties as the Sample or Haverland by themeslves we need not expect a crop. While this is shown very plainly in the strawberry it is observed to a more or less marked degree in all fruit blossoms. Darwin summed up this subject by saying "Nature abhors perpetual self-fertilization."

Improper pollenation results in a failure of fruit to set or in its dropping before ripening. This has been proved in extensive experiments. By covering numbers of blosoms with cheese cloth to keep out all insects it was found that the blossoms so covered produced no fruit. It has been asserted by those who have made a careful study of the subject that the owrk done by bees in pollen distribution is worth more to humaniity than the rcop of honey produced. It has been noted that fruit growers who keep bees have better crops in the so called off years and a higher average yield than orchards situated where bees are scarce.

Opportunities for Honey Production

Honey is a product that goes to waste in most localities and in these times of food scarcity we may be of service by providing bees to harvest this valuable food product. Every pound of honey produced will release its equivalent of butter or sugar ofr food purposes.

The present crisis int owhich our ation has been forced may be a supreme test of the usefulness of our industry, tor should our supply of sugar be suddenly cut off we might be compelled to depend on honey as our only source of sweetness. It is claimed that the United States only produces 20% of her sugar requirments and Canada much less. If this is correct and our loss in shipping continues it would not take much of a prophet to tell us that the time when we part company with the sugar bowl is fast approaching.

Every beekeeper worthy of the name knows that in his locality a ton or tons of honey go to waste in an ordinary season. It is not worth while to make a determined effort to secure what we can and place it on the market. Our beekeepers have never had better opportunities than the present ones.

In past years the bulk of honey in our larger markets was imported from other provinces. The large increase in the price has changed thi scondition. When the price of honey lingered around the 10 cent mark, wholesalers bought large quantities and shipped them to New Brunswick to be bottled and distributed to the grocery and drug trade. But now, with honey selling at 18 or 20 cetns per pound, there is not much danger of large importations being made.

If we can increase our production to supply the local trade that now exists we will then be able to build up a larger trade on that foundation. A prominent beekeeper in Guelph told me recently that when he started beekeeping ten or more years ago, he could not sell his crop of seven hundred pounds in that city, but by selling good honey, properly packed, his scity trade had grown to 18 tons, which amount he had sold last season, and he claimed he held no monopoly on the trade. That shows what can be done in the way of building up a market.

Those who begin beekeeping now start under decidedly different conditions than those who began twenty years ago. No branch of farm work has advanced with such strides as the beekeeping industry. Each year has ushered in new inventions in the line of machinery to help handle the crop and with the advent of power extractors, steam uncapping knives and other improved equipment, large quantities of honey can be handled much easier than in the old way.

Wintering

Our beekeeping industry might be likened to tripod or three legge stool. Should any leg fail the structure falls. These legs we term wintering, swarming and disease. Quite a number fail in wintering and by wintering I do not mean simply living through the winter. Colonnes may live through the winter and come out in numbers so weak that they may be of little use when th ehoney flow comes.

Successful wintring means having hives well filled with bees when they come from the cellar or packing case. The larger the cluster the more heat they can generate and the better they are able to resist the rigors of the spring weather with its cold nights. Strong colonies will increase rapidly at this time, while hives having but a handful or two of bees will, either only be able to hold their own or will sometimes die outright.

A cellar where the temperature remains fairly, between 40 to 45 degrees gand the atmosphere is fairly dry, is a good place to winter bees, but cold damp cellars are not good.

Bees have been wintered out doors successfully in several places througout the province, both in single cases and with four hives in a case packed with planer shavings or other insulating material, so no one need hesitate about starting in beekeeping because of the lack of a suitable cellar to winter them in. In out door wintering it is best to have packed cases in a sheltered location; a windswept place is not good.

Swarming

Bees may come from the cellar after wintering perfectly and still give a poor crop, because of swarming. Nature planned that bees should increase by swarming, but nature is satisfied if the bees gathre sufficient honey to winter them. We plan to get large quantities of honey by offsetting nature's plans. But when we work against nature twe must be perfectly familiar with those plans, therefore, to be successful in the control of swarming we must know why bees swarm and what treatment to give to prevent them doing so. This can only be accomplished by opening the hive each week and noting the condition. When we do this we soon become familiar with each move made by the bees and can then give treatment that wil lcontrol the swarming impulse to such an exten that we can afford to lose the few swarms we hvae, rather than be always watching for them.

We can give no treatment that will effectively control swarming in box hives. By box hives I mean any hive that is so constructed that it is necessary to kill the bees to get the honey. Most box hives are built so that they receive little or no ventilation, and because of lack of ventilation aod the small size of the brood chamber, the bees swarm. We do not need to allow bees to swarm for the sake of increase. This can be made artifically much easier than we can climb trees to gather in stray swarms.

Disease and Inspection

I believe tha twe have very little disease in the province. A few cases have been discovered. Some of these were treated successfily and others have been neglected but we hope to

THE NOVA SCOTIA FARMERS' ASSOCIATION AT TRURO—JANUARY, 1918.

have these treated next season.

Little can be accomplished by an inspector if he cannot have the earnest co-operation of the beekeepers themselves, as there is little use in enforcing the disease law if the beekeepers are not careful about the matteh themselves. But much can be done in the way of preventing the spread of foul brood, if the inspector and beekeeper work hand in hand. While we have so many bees in boxes it is a difficult matter to make complete inspectio n of all colonies. One of the most difficult problems that other provinces have had to deal with is the disease question. We plan to pay particular attention to this matter during the coming season.

Grading and Marketing

We should aim to manage our apiary work so that we can place on the market a fairly uniform grade of honey. Then, when a dealer asks for 10 gallons of Light or Dark Honey he can be reasonably sure of getting it. We will then be in a position to cater to a trade with unlimited possibilities.

We have only a few beekeepers who can furnish honey that will fulfill these requirements, yet ni St. John City alone we have close to a hundred dealers that could handle good honey. Most of these dealers never get a chance to sell honey because it is not available.

Aid to Beekeepers

Hitherto, beekeeping in New Brunswick has not received the attention and encouragement that its opportunities deserved, but the Department of Agriculture, by the appointment of a Provincia lApiarist, plans to remedy that state of affairs as much as possible. Demonstration meetings will be held in localities where there are a number of beekeeprs and as many viits to individual apiariis will be made as possible. The great bulk of Mr. Floyd's time will be spent in these demonstrations and, more especially, in personal visits to beekeepers, as this plan of work is productive of thebest results. Address all letters and enquiries relative to beekeeping problems, demonstrations, and viisits to L. T. Floyd, Provincial Apiarist, Department of Agriculture, Fredericton, N. B.

INCREASED PRODUCTION; CAPITAL'S OPPORTUNITY

To the Editor of the Maritime Farmer:

Sir,—As your readers are well aware, the call has gone out for "Increased Production" in the different provinces and particularly for wheat and pork.

The comittee in charge of this has been working hand in hand with the Department of Agriculture and the Committee on Food Conservation under Dr. W. C. Keirstead in this province and, so far as we can do so, matters have been arranged, for th epresent, for a vastly increased production of wheat, which in turn will, we hope, lead to some food for the increased pork production.

The department has purchased, or is under contract for the following seed:
10.00 bushels of Marquis wheat.
6.598 bushels of Red Fife.
1.200 bushels of White Fife.
50.000 bushels of oats.
1,500 tons of fertilizer with potash, 3-6-5.

This grain iis all beinig held available for delivery to the farmers through their County Councillor and will be sold as near cost as will be deemed practicable. The fertilizer is availiable at cost whenever farmers club their orders so that deliveries may be made in at least 25-ton lots.

This should provide for a considerable increase and from the experience that feeders of live stock are having this winter and may have before spring, it would seem absolutely necessary that during the coming season as large an acreage as possible be given to the raising of wheat, where the land is suitable for it, and that arangements be made for the cultivation of as much wheat land as possible for next season, in order that there may be some feed available for our own live stock, because it is estimated that Candad is at the present time milling only some 84 carloads per day of feed, and that much is expected to be distributed throughout Canada from the Atlantic to he Pacific, and as the Atlantic is some distance from the heart of the mills, naturally, the nearer centres to the mills are apt to get the feed first and now that it is not absolutely essential that the millers load flour in order to ship feed, that is so far as the miller is concerned, yet it takes so long to make up a carload of feed only at the mills that it means a considerable delay if one tries to purchase feeds entirely by themselves.

It is expected that before the Fall arangements will be made by the department so that the milling of this wheat will be taken care of. In any event there is a sure market for the crop or in the whole grain itself, as it is the whole grain more than flour that is wanted for export.

Now, having gone this far, the next step is to realize row difficult it is going to be for our farmers in this province who are not, as a rule, overburdened with capital, nor have they in the past been able to make profit enough to enable them to pay anywhere near the current rate of wages that labor demands, and the ydepend on their own boys to stay at home and help in this production, though in many cases they are unable to keep them on the farm, owing totheir being unable to pay them equal to other trades.

The majority of the farmers have in the past been working very long hours, in order to reach their ordinary production and when seeding time comes around, almost all their available horses are pushed to the utmost. Consequently, it iis going to be hard to expect so very much more from them, unless the Capitalist steps in to assist.

The most practicable way for this to be accomplished, in my opinion, would be for the merchant or manufacturer, who, in many cases, has been making good profits from war conditions, to use some of this profit get next to some farmer of good reputation, whom he himself would know and offer to finance him for whatever wheat acreage he would put in, making an agreement with the farmer that he would be reimbursed from the profits of the wheat crop. It might be that there would not be much profit made, consequently it is only fair that the man with the money should take the chance with the farmer.

Many people do not realize what the farmer is up against in the way of weather, land conditions, etc., and especially iis this so with those who do business with a roof over their heads, turning over stock and manufactured goods.

If the man, who is asked to grow the wheat, can be assisted by the capitalist taking a chance with him, I feel quite sure that greater results would be produced.

The crop will, unquestionably, be wanted an dthe price should not permit of very much loss, but ought to bring in some litle profit, provided of course, the elements give us a fair chance.

It looks at the moment as though some arrangement might be made, whereby some of those who have been called to Military Service, but who are uesd to working on the land, may be available, though of course, they will have to be paid a corresponding rate of wages.

The farmer in most cases cannot afford very much hired help, especially for such an uncertain crop as wheat will be in this province; so it is up to the moneyed man to help in this production, in any and every way possible.

I am quiiet sure that many of our smaller farmers wil lattempt a greater wheat acreage if they see th ecapital availiable for the hiring of labor and horse power or tractor.

I trust that our merchants and manufacturers, hwo have the capital, will see that they help in this direction for it would most certainly seem that we must get the wheat in some way.

E. A. SCHOFIELD,
Chairman of the Provincial Increased Production Committee.

THE COST OF GROWING POTATOES IN NEW BRUNSWICK UNDER 1917 CONDITIONS

On account of the various investigation conducted by the Food Controller into the costs of production of various crops and the controversy arising especially in regard to potato growing, it may be of interest at the present time to give an actual statement of the cost of growing this crop at the Experimental Station, Fredericton, N. B.

In approaching this question it might be stated that on account of the larger estimate of the cost of production in New Brunswick as compared with other provinces, that doubt has been expressed in some quarters as to the genuineness of the figures submitted by some New Brunswicik growers.

The Experimental Station is in a position to help in dispelling these doubts by giving an official statement of cost actually incurred on one acre of potatoes especially set apart for this purpose. At the same time these figures may serve to call attention of growers to the desirability of keeping a businesslike account with their own individual field operations.

The conditions under whicch potato growing last year necessitated higher expenditure than ever before. Labour, fertilizers and spraying materials were much more costly than in previous years, while the price of seed was higher than ever before known in the history of the country.

As a comparison of cost and illustrative of its increase in 1917 it may be stated that based on the same details as given for the season of 1917, an acre grown in 1915 cost $73.98, the crop was 80 barrels of marketable worth $1.75 and 7 barrels culls worth 50 cents; a total value of $143.50 leaving a profit per acre of $69.52. A cost per barrel of 85 cents and a profit per barel of 80 cents.

In 1916, the acre cost $88.09, the crop was 120 barrels marketable worth $2.75 per barrel and 6 barrels culls, worth 50 cents a total value of $330.00, leaving a profit of $244.91. A cost per barrel of 70 cents and a profit per barrel of $1.94.

In 1917, the following are thdetails of the actual time and expense put on the test acre. It might be stated that this land lay immediately alongside the acre grown in 1916 and the soil was similar except that it was better drained.

Fall ploughing 5 hours $1.70, harrowing 68 cents, sixteen tons stable manure at $1.00, $16.00. Labour in applying it $3.70. Ploughing in manure, 5 hours, $1.70, harowing 68 cents. Fifteen barrels wood ashes at $1.13 1-3 per barrel, $17.00, 835 pounds acid phosphate at $23.50 per ton, $9.81. Nineteen and one third bushels Green Mountain potatoes at $2.40 per bushel $46.32. Cutting and disinfecting seed at 15 cents per bushel, $2.90. Planting 2 men and team, 4½ hours $2.43. Cultivating and horse hoeing three times, 18 hours, $4.86. Hand hoeing and weding, 2 hours, 40 cents. Pulling weeds 2 hours, 40 cents. Spraying 6 times, 9 hours with horse, $4.26. Spraying materials $8.08. Digging, 7 hours, man and team, $2.38. Picking, 51½ hours, one man, $10.30. Hauling to cellar $1.29. Rent of land $3.00. Depreciation of machinery and tools $4.00. A total cost of $141.88.

The yieild was 58 barr ls mraketable, worth $2.50 per barrel, 5 barrels culls worth 50 cents. Total value of crop $165.00, leaving a profit per acre of $23.12; a cost per barrel of $2.25 and a profit per barrel of 36 1-3 cents.

Had this crop been no better than the majority of fields in the province last season, viz., about 40 barrels per acre, the loss would have been over $4.00 per acre.

THE CO-OPERATIVE MARKETING OF WOOL

An Opportunity That New Brunswick Sheep Men Should Take Advantage of.

Marketing wool co-operatively is the only way in which sheep men can secure the full value for their product. The New Brunswick Department of Agriiculture realizing that the wool producers of this Province have suffered financially due to the method of marketing, that has prevailed in the past, and wishing to remedy this condition, and at the same time to give every encouragement to the sheep industry possible, has prepared a plan that will neable every wool producer to market his porduct to the very best advantage, i. e., direct to the manufactuer. In this way the middleman is completely eliminated. Under the old method of marketing the wool was sold to the country buyer. This was marketing at a disadvantage because the buyer had to have a profit—usually a good big one—for his trouble.

Co-operative marketing of wool is the method that obtains in every other Province of Canada except New Brunswick. In 1917 over 2,000,000 pounds of wool was marketed in Canada co-operatively. Each year the amount marketed and the price received has increased showing conclusively that thi smethod of marketing is proving popular with the sheep men wherever it has been tried.

Marketing co-operatively means that the wool is assembled at central grading stations where it is graded and then sold direct to the woolen mills according to grade. The advantages of this method are quite apparent and might be summed up as follows:

1. A large suantity of graded wool assembled at one point attracts the best buyers from all parts of Canada and the United States, consequently the best price obtainable is secured.
2. The wool grower with clean, dry wool receives a premium for nis trouble. The flat rate of so much per pound is displaced.
3. Marketing wool co-operatively leads to a greater interest in the sheep industry and also to better wool being produced.
4. Co-operative marketing or wool is a beginning and will lead to co-operation along other lines.

This is an opportunity that the progressive sheep men of this Province will be quick to grasp. Detailed information will be supplied upon reuqest. Write in for pamphlets and literature on the subject.—Department of Agriculture, Fredericton, N. B.

THE DAIRY COURSE AT TRURO

In connection with the special course in milk testing which will be conducted in the Agricultural College at Truro from March 13th to April 4th, it is well to note that new regulations have been made at Ottawa, which will result in the appointment of one supervisor for each Province. The work of testing wil be done localy and a charge of ten cents per test will be made inistead of five cents per test as formerly. The services of competent milk testers will be much more in demand than formerly and the course affords an excellent opportunity to qualify as a milk tester.

After a milk can has started to rust, the best method of procedure is to scour off as mucch of the rust as possible, and then follow the proper methods of washing and drying. It is understood, of course, that the cans should be protected from the weather and not allowed to stand out of doors or in damp, dark rooms.

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And Co-operative Dairyman

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MARCH 5, 1918

DATES OF ISSUE.

March 5-19
April 9-23
May 7-28
June 11-25

BIG INTERESTS STILL RULE

Canada has been pretty thoroughly placarded by the Food Controller with appeals for conservation of Wheat Flour. These are shown in our homes, hotel dining rooms, restaurants, dining cars, etc. We are assured that the one big need of the Allies is wheat flour. In the United States they are recognizing this need by forcing the substitution of other cereals for wheat. The United States has not been in the war as long as Canada, but the authorities there, President Wilson and his Food Controller, Mr. Hoover, are really demonstrating to the world that they believe there is a war on. In Canada we have been asking the people to save wheat and we have been inviting Farmers to increase the production thereof. At the same time the Food Controller is allowing every flour mill in Canada to offer mill feeds in small quantities and insist upon the customer taking the balance of the car in wheat flour. This flour, in many cases, goes into warehouses, to remain until the merchant can dispose of his stock. In the meantime, if the Food Controller is to be believed, the Canadian farmers' sons in France are suffering for the wheat which we are thus locking up. The Food Controller has not yet worked up sufficient courage to tackle the big milling interests. He is not yet convinced that the lives of the men in the trenches are to be given first consideration. If Mr. Thomson really wishes to convince the farmers of the Maritime Provinces that wheat is as badly needed as he says it is, he will take the necessary steps to give practical proof of his belief that the life of the Canadian soldier and the safety of the British Empire are to be preferred to the big financial melons which the millers in Canada have been cutting for the past few years. It is time the cards were laid upon the table. When they are laid down there should be a full deck and the pasteboards should be turned face up. A good many people in this country are beginning to doubt whether wheat is as scarce as the Food Controller would lead us to believe it is.

THE DOG NUISANCE

The regulation of the Dog Nuisance in New Brunswick is now in a fairly good position. At the annual meeting of the several Municipal Councils of the Province the Law was put into effect in a number of the Counties. The change is a most desirable one because it officially recognizes for the first time that the counties adopting it are convinced that sheep are more essential to the Agricultural development of the Province than mongrel dogs. The law provides that a tax should be levied on all dogs. The monies so raised are to constitute a fund from which the farmers will be recompensed for losses sustained through the destruction of their flocks by stray canines. Every owner of a dog must register his animal. In cases where sheep are killed or injured and the identification of the dog's owner can be learned the master of the brute must make good the loss. The law would be much more effective if it went to the length of providing that all dogs in New Brunswick should bear a tag with the owner's number properly displayed. That would determine ownership without question. It should also provide that all dogs without such tags be destroyed on sight. Such a regulation has been adopted in many parts of Ontario and the sheep owners there feel that now they are in a position to more effectually take advantage of the splendid opportunity afforded by the present wool market. Legislation to bring about these reforms should also be sought in New Brunswick.

FERTILIZER IS SCARCE

The Bowker Fertilizer Company recently advised their N. B. Agents that they expected to ship a very small proportion of their usual New Brunswick allotment this year. The firm attributes its inability to send forward its usual supply to the heavy tax on the transportation facilities leading into the Maritime Provinces. The interruption in the steamship service from Boston to St. John has made it difficult to get the usual supply forward. The freight congestion on the railways of the United States has also been an important factor in curtailing the firm's output. While 1919 may seem a long way off to a good many farmers, the Maritime Farmer would suggest that the transportation problem will be even more acute next season. The argument of the Bowker Fertilizer Compan ytherefore will be correspondingly strengthened. It would thus seem to be in order for the farmers to get their fertilizer orders ready at once in order that they may be placed at the earliest possible date for shipment for the planting season of 1919. The N. B. Agricultural Societies United are prepared to handle fertilizer at cost for all Agricultural Societies joining the central organization. Some 40,000 tons of fertilizer are used in New Brunswick annually and there is no reason why the most of these goods should not be handled by the central body. The N. B. Agricultural Societies United has been able to reduce the cost of fertilizer to the farmer from $10 to $15 a ton. The larger the amount purchased through this medium the greater will be the saving all around. Agricultural Societies not already associated with the N. B. Agricultural Societies United, should lose no time in writing the secretary of the organization, Mr. J. D. McKenna, Sussex, N. B., who will be prepared to give all information necessary to enable the applicants to prepare orders for delivery in 1919. "Do it Now" is a Motto that applies admirably to the fertilizer outlook of 1919.

CO-OPERATION AMONG FARMERS ESSENTIAL

The need for co-operation among farmers is becoming more and more apparent. What has been accomplished in the west by the Grain Growers should be an inspiration to the farmers of Eastern Canada. We have various farm organizations. We may well ask ourselves what they are accomplishing. To date the net result has been the holding of various annual conventions and the passing of resolutions covering diverse subjects. With the adjournment of the convention, little if any, attention has been devoted to seeing that the objects aimed at by the resoluters are attained. What we want in the Maritime Provinces is a big central farmers' organi ation which will be in a position to speak and speak with authority in the agricultural interests of the Maritime Provinces. War conditions have wrought a great change in the horizon. Old ideals have been shattered and new conditions will arise the very day that peace is declared. The whole social fabric of Canada will be turned inside out and if the farmers are wise they will be prepared to meet changed conditions. The time to start is NOW. Every effort should be put forth to get farmers together in support of their mutual interests.

LEND A HAND

Everyone not only has the right, but the duty to be happy. Life might mean much more to both the individual living and to everyone else. And it is by no means an impossible philosophy. It requires only a little wise effort and a good deal of just plain, right thinking. It is partly a habit and a contagious one, tnerefore of good influence. Why is it not just as easy to see the sunshine as the cloud, just as well to for the good, the true, and the beautiful, as to be always finding only evil, false and ugly things? The answer lies with each individual, within that intangible part called the heart and the soul. The mind, too, has its mission, a directing and adjusting responsibility. It has been said that, "as a man thinketh in his heart, so is he," but he is lacking when he fails to conrtol and to fashion these thoughts as much as he might.

It is something of a burden to go out in cold weather, and it does not look sensible to stay at home and work instead of driving to town or visitnig, but in the end it pays to get out frequently. The exchange of ideas, the fresh air, the change of scene and the mingling with people other than one's family all do good in a physical sense, and when it comes to the mental state there is nothing that so stimulates a woman as fellowship with those outside her home.

So don't imagine yourself superior to the woman who goes about all winter, if you house up and refuse to budge from your own fireside. You may save the price of a new dress or wrap or hat by staying at home, but on the other hand you may lose more than that in paying the doctor. And if you do keep on going you will be a far better wife and mother than you possibly could be if you stayed on the job every minute. Maybe you don't believe this, but eminent physicians say it is true and they know.

* * *

The surest way to train a boy is to appeal to his imagination, to help him to see what you are trying to do and to gain his co-operation. Without him as an interested ally you will be balked at every turn.

SEED LABORATORIES HELP THE FARMERS

The Seed Branch of the Dominion Department of Agriculture maintains laboratories at Ottawa and Calgary where seeds are tested for purity and vitality. A large proportion of the samples received at the former laboratory and a smaller proportion at Calgary are sent by merchants in connection with the grading and germination of seed as required by the Seed Control Act.

In these government laboratories there are, on file, samples of every lot of timothy, red clover, alsike and alfalfa seed, which are officially graded and exposed for sale in compliance with the requirements of the law in Canada. Certificates isued to the senders of the samples, show not only the grade of the seed but the number and kinds of the different weed found in the sample. In buying seed farmers may insist on seeing copies of the certilcates covering the seed offered to them, and if for any reason they suspect the seed to be misrepresented, they have the privilege of sending a sample of it to the laboratory on their own account. In sending samples, it is essential that they be thoroughly representative of the bulk lot of the seed from which they are drawn, and in case the seed has been tested before, the original test number should be quoted, so that the two samples from the same lot mey be compared.

Sowing 500 Weed Seeds to the Square

A sample which the sender called timothy, and which he stated was intended for seeding, was recently received at the Ottawa Seed laboratory, and found to contain 15,744 weed seeds per ounce, (there are 82,000 timothy seeds in one ounce). Sowing thiis seed at the rate of 10 pounds per acre would place about 500 weed seeds on each square yard. Another sample also called timothy contained 25,328 weed seeds per ounce. Sometimes the impurities in seed are of such size that they may be easily removed by the use of the proper screen and it is the custom of the laboratory to recommend screens in such cases. Recently a farmer's sample was found to contain 1632 weed seeds per ounce but after recleaning as directed by the laboratory only 96 were found.

Losses Through Use of Low Grade Seed

The use of impure seed is often the cause of considerable loss. Last season an Ontario farmer sowed flax containing several wild mustard seeds per ounce. This farmer considered that the use of this seed damaged his farm to the extent of several hundred dollars.

A Quebec farmer last spring sowed barley which a subsequent germination test showed to be of very low vitaliity. The result was that he has not only lost his nurse crop and wasted good feed but noxious weeds were enabled to multiply to such an extent that succeeding hay yields must be considerably lowered. Last season many field had to be seeded a second time because the seed used was heated or otherwise lost its vitality. Grain is so scarce and a crop failure means so much now, that every reasonable precaution should be taken this year against using as seed grain that is not of a strong vitality.

The information furnished as a result of a thorough test of a lot of seed enables one to use it with intelligence. Canadian grown red clover seed containing quite a large number of such seeds as lamb quarters, plantain and foxtail, might be preferable to imported seed containg only two or three weed seeds per ounce, if they were wild carrot, bindweed, or some of the other very objectionable weeds.

It is only when the weed seed content, vitally and other qualities of seed are know that an inteligent estimate of its seed value can be arrived at.

Vitality Tests Especially Necessary This Season

Germination tests of all grain to be sown this spring are especially necessary at this time. The area that can be sown and the thoroughness with which it can be prepared are determined largely by available labour and weather conditions. After seeding, yields in most cases depend largely on fertility of the soil and climatic conditions, the latter being entirely beyond our control. Plant diseases and insect pests can of course, be dealt with to som eextent. To stake money and labor on a crop doomed to partial or total failure by the use of dead, weak or inferior seed is in ordinary times very foolish, but to fail in this way now is to be unfaithful in one's duty. Moreover, sowing grain that will not grow not only incurs crop failure but is a waste of valuable feed. Every spring thousands of bushels of grain and corn that should be fed to animals are put into the ground as seed, and thousands of acres of valuable land produce less than hey should because of this. The loss is a double one.

Every lot of grain to be used as seed should be tested for germination no wso that there will be plenty of time to locate a suitable supply, should the seed on hand be found unsatisfactory . Farmers who desire seed samples tested for purity or germination may send them free of charge up to twelve ounces in weight, in strong envelopes or cotton bags addressed to The Seed Commissioner, Ottawa.—Seed Branch, Ottawa.

THREE VALUABLE BULLETINS ON FOOD PRODUCTION IN NOVA SCOTIA

Important Announcement of Policy of Department in Regard to Seed and Bigger Implements

Three imoprtant Food Production Bulletins have recently been issued from the Nova Scotia Department of Agriculture and will be widely circulated in a few days. Those who are not on the mailing lists at the College may obtain these bulletins FREE on application to the College at Truro. The first buletin on "Wheat Growing in Nova Scotia" written by M. Cumming, Secretary for Agriculture, and S. J. Moore, Dominion Seed Inspector. In this buletin in addition to much practical information, will be found a statement of the Department's policy to insure an abundant supply of seed wheat in Nova Scotia for 1918 seeding, in connection with which it may be added that upwards of ten firms in the Province have undertaken under this policy to handle at least a car of seed wheat, which with local supplies available should give the farmers of Nova Scotia an ample quantity of seed.

The second bulletin in on "Bean Growing" by Prof. P. J. Shaw, Horticulturist at the College. It deals with the importance of every farmer and gardener in Nova Scotia growing at least sufficient beans for himself and family. It is pointed out that Beans are the best known substitute for beef. They are grown in fairly large quantities in the Annapolis Valley, but owing to their tenderness have not been grown very extensively except as wax beans in Eastern and Northern Nova Scotia. In this bulletin the author states that the Department of Agriculture has located and can put buyers in touch with growers of several hundred bushels of hardy strains of Nova Scotia grown seed beans that will ripen from ten days to two weeks earlier than the average beans, and can therefore be planted to advantage on many farms where beans were considered an impossible crop. In addition to this the bulletin contains information in regard to methods of growing, amount of seed required and many other practical details that should prove of interest to every gardener and farmer in Nova Scotia.

The third bulletin is on "Greater Labor Efficiency on the Farms of Nova Scotia by Using Bigger Implements" by Prof. J. M. Trueman of the Agricultural College. In this bulletin, striking arguments are set forth for the more extensive adoption of two furrow plows and wider harrows by means of which every man on the land can increase the amount of land cultivated. It is pointed out that three horses and one man with a two furrow plough can turn over about as much land in a day as four horses and two men, and it is urged that, since man labor is the most scarce and expensive kind of help on the farm, many farmers should adopt the three or four horse hitch and larger implements and so make each man more efficient.

In this bulletin an announcement is made by the Secretary for Agriculture **that the Department of Agriculture of the Government of Nova Scotia will pay a bonus of 25% of the cost of two furrow ploughs bought in the Province of Nova Scotia between now and the first day of May next.**

These three bulletins are all valuable and timely bulletins and should be in the hands of every progressive farmer in the Province of Nova Scotia.

SUCCESSFUL SHORT COURSE AT TRURO

The short course at the College of Agriculture, Truro, was completed on Thursday, January 10th. The enrolled attendance was 180 and in addition there were several one or two day conventions and a very considerable intermittent attendance which would bring the total number who took advantage of the educational work up to about 350. The attendance would have been at least 100 larger had it not been for the blocade on the Railways last week which held up practically al of the Eastern delegation.

From the standpoint of work done, and of the interest taken, the staff are unanimous in considering the 1918 short course to have been the best yet given at the College. Special attention was given to the matter of the using of the best kind of seed, and the improvement of the live stock of the country. At the conclusion of the course, two boxes in which oats had been grown were exhibited to the class. One box was seeded with a certain amonut of common feed oats, and the other box with a like amount of selected seed oats. The result was nearly double the number of plants in the second box, and a very considerable better growth. From this illustration the importance of buying if need be a lesser quantity of high class seed oats instead of a larger quantity of a low class feed oats was urged on every student present and the lesson was applied to every kind of seed.

Similar ocular demonstrations were given in regard to live stock and many other phases of agriculture. The result was that practically every student left the course having adopted the suggested New Year's Short Course resolution of "No Food Shortage If We Can Help it."

This is the fourteenth short course which has been held at the College of Agriculture in Truro. The beginning in 1905 was small, but since that time the course has grown in popularity and influence until today it is doubtful if any other single factor contributes to the advancement of Nova Scotia Agriculture than the Truro Short course.

VALUE OF TRACTORS IN HAULING GRAVEL FOR MAKING ROADS

Records were recently kept very carefully of the cost of hauling gravel for doads which show the value of horse and mechanical traction under similar conditions. About twenty-two miles of road had the gravel distributed over them by teams and about 3.6 miles were covered with gravel hauled by a caterpillar tractor outfit. Itemized cost records were kept so carefully that the results of these two methods of hauling can be compared.

Using teams, it was found that the cost of loading and hauling a cubic yard up to one-half a mile ranged fifty-seven to ninety-four cents per mile. Where the hauling was one-half to one mile the cost per mile ranged from thirty to forty-eight cents. Where it was from one to one and one-half miles the cost was twenty-three to thirty-five cents, and where it was between one and one-half to two miles the cost per mile was twenty-two to twenty-eight cents. The detailed figures show that the cost depends largely upon the efficiency of the men engaged in loading the wagons. These loading costs varied from seven to ewenty-five cents per yard. The least figure was obtained by making the teamsters help in the shovelling and the highest figure was due to an excessive amount of frost and firewater.

The tractor outfit consists of a gasoline driven caterpilalr tractor the type of machine upon which the design of the British army tanks is based, seven three andone-half yard spreading wagons, a fifty yard storage bin and a loading machine. The work was complicated by a very heavy grade at one place. The best that could be done here was to haul four cars across private land and then go back and haul the remaining three cars across this rough ground. A full train was then made up and hauled the remaining two and one-half miles. The total average haul was about three miles. As the work progressed another gravel pit was opened where these grades did not exist and the hauling was done more easily. On the first part of the work the average cost was 15.4 cents per yard per mile and on the latter it was 15.41 cents.

The engineer who reported these figures has stated that with a more powerful tractor and a loading outfit of greater capacity, a much lower operating cost could have been obtained with the tractor outfit. It is his opinion that with proper equipment, mechanical traction of this type is much cheaper than hauling by team. There are also other advantages which he has summed up as follows: By applying the gravel in two courses with a tractor, the gravel is rolled without additional cost and the road is ready for travel as soon as the tractor leaves. Furthermore by loading the gravel into a bin, thence into wagons and finally dumping it on the road, the material is better mixed than when it is shoveled directly from the bank into the wagons which dump it on the roads.

AIM TO PRODUCE PORK MORE ECONOMICALLY

Many farmers could produce pork more economically than they are now doing. Instead of selling off the last bacon hog this autumn, the Canadian farmer should keep one or two of the best young sows for breeding. It will cost but little to winter them; in fact, they are best kept in thrifty condition when not too fat. Next spring, arrangements should be made to have an out-door run for the pigs during the summer. A small field of clover, or an acre or two sown to rape or oats and vetches would be an excellent and economical place to raise the pigs. The green feed, supplemented by a little grain, and plenty of clean water will produce thrifty pigs and grow them cheaply to a size ready for quick finishing with a heavier grain ration in the autumn.

One prominent writer in the United States goes so far as to say that the supply of fats will be the deciding factor in the war. Certainly it is essential that immediate steps be taken to increase the production of pork in Canada. Some farmers seem to be prejudiced against those who are urging and working for increased production. The present, however, is a serious time, and petty prejudices should be utterly forgotten in one great effort to win the war. Only the farmer can do much to actually increase the supply of bacon. He has a great field for service in this matter, and a rare opportunity to supply, with profit to himself, what is greatly needed.

HORTICULTURE

MORE HONEY IS WANTED

An Opportunity for Bee-keepers

Sugar is an important war food, its price is high and there will probably be a sortage in the near future. Honey the unequalled natural sweet that sugar cannot wholly replace, is being affected in sympathy. The unusually large crop of honey produced in Ontario, Quebec and Manitoba in 1916 was sold quickly at prices slightly above those o fthe previous season and present indications point to a still greater demand and higher prices for the new crop. Thus, by prolucing as much honey as possible this year, the bee-keepers of Canada will not only increase their returns but will be helping the Empire. These remarke refer to extracted-honey. An increased demand bor comb-honey cannot be predicted.

The appeal for greater production is especially to those who are neglecting their bees or are not managing them in the best manner. There are many apiaries in good locatition for profitable honey production more particularly in Eastern Canada, where colonies in box hives or in seldom-opened frame hives now producing from 20 to 40 pounds of honey each could be made to produce 80 to 100 pounds or more in an average season. If time cannot be spared to give the bees the attention they need, they might be handed to a member of the family who would take an interest in them, or they might be sold to a professional bee-keeper. But well mananged bees often pays as well as, or better than, one's regular occupation for the amount of time spent with them. The different operatoins in modern apiary practices are breifly described in "Bees and How to Keep Them" (Experimental Farms Bulletin No. 26 26, Second Series) which may be obtained free on application from the Publications Branch of the Department of Agriculture, Ottawa. A good way to become acquainted with the better methods of bee-keeping is to arrange to attend one of the apiary demonstrations that will be held early in the summer, under the auspices of several of the Provincial Bee-keepers' Associations. A list of the Bee-keepers Associations with the addresses of the Secretaries is given in the above mentioned buletin.

Another class of bee-keeper that may profit greatly at this time is the exeprt apiarist located in a good honey producing region, whose time is not fully occupied with the bees. His principal problem will b ehow to increase the number of bees to the fullest extent in time for the honey flow, so as to make the most of his valuable knowledge of bee management. The early replacing of unsatisfoctory queens is important. Judicious feeding during the dearth that in many places immediately preceres the honey flow will help under some conditions. By dividing strong colonies not less than six weeks before the middle of the main honey flow an increased crop of honey will be obtained, provided fertile queens may be procured from breeders in the Southern States at from 80 cents to $1.00 each. This procedure is chiefly applicable to the fireweed and goldenrod districts; as a rule the clover honey flow comes too early for it. Two-pound packages of bees with untested fertile queens obtained from the south by express in May or early June costing about $4.00 each, including transportation charges will be found a paying investment, if they arrive in good condition and can be placed on combs.

There should be a sufficient supply of supers for extracted honey, with frames and foundations, or combs, on hand to take a maximum crop, and this year it is more than ever necessary to order supplies and honey containers early. Two-comb supers may be fastened together to make one dep super f roextracted honey production. Particulars of an attractive container for honey that has been designed to meet a possible difficulty in obtaining sufficient tin pails or glass jars will be supplied on aplication to the lApiarist, Central Experimental Farm, Ottawa. Beeswax is very scarce and all discarded combs and scraps of wax should be saved to be turned into foundation. It will be wise to retain some combs of clover honey in case they are needed for winter stores, becauhe sugar may be very dear in the autumn.

TO ENCOURAGE BEE-KEEPING AND HONEY PRODUCTION

The New Brunswick Provincial Department of Agriculture announces the apointment to the Horticultural Division of Mr. Leonard T. Floyd, of Bloomfield Station, Kings County, as "Provincial Apiariist."

Mr. Floyd comes to this position with good practical qualifications, for in adidtion to his general agricultural experience at his farm at Bloomfield, he has specialized successfully for the last ten years in beekeeping and the growing of small fruits. He has been President of the New Brunswick Beekeepers' Association for the past four years and has taken an active interest in the advancement of beekeeping in this province.

Mr. Floyd wishes to get into touch with as many beekeepers as posible and invites correspondence on all phases of beekeeping and honey production. He will be glad at all times to give information and advice on such matters.

The production of honey is in these times, more important than ever and the Department realizes the need of, and desire to encourage and improve, the beekeeping industry of this province. For this purpose it has appointed Mr. Floyd and he will personally visit as many of the beekeepers as possible, so that they may have, at first hand, the benefit of his experience and advice. Address all enquiries to L. T. Floyd, Provincial Apiarist, Department of Agriculture, Fredericton.

CONDITIONS FOR SUCCESSFUL BEE-KEEPING

The first requisite for sucessful beekeeping is that the owner of the bees should be interested in them. He will then study their ways and will learn to manage them well. He will learn from bee books and journals as well as by exeprience, and, also pehaps, from the friendly advice of a beekeeping neighbor.

Another important condition is an abundance of honey-producing flowers within a mile or two of the apiary. There is hardly a place in the settled parts of Canada where this condition is not fulfilled to some extent. The kinds of plant that produce the bulk of the surplus honey are not many. By far the most important are alsike and white clover found on almost every farm, and most plentiful, of course, where they are grown for hay, pasture or seed. In southern Alberta and the dry interior of British Columbia, clover yields first place to alfalfa, and in the semi-cleared lands of the north to fireweed (**Epilobium angustifolium**) a promising honey plant which is now the subject of a special investigation by the Be Division of the Experimental Farms. Among minor sources of surplus honey are buckwheat and basswood in southern Ontario and southwestern Quebec; goldenrod an daster, principally in eastern Canada; wild raspberry, sweet clover, Canada thistle and various weeds. Red clover is an example of a plant containing abundant nectar in which the flowers are too narrow and deep for the bees to collect it.

A third factor of great importance is suitable weather for the development of the honey plant and for the secretion and ingathering of the nectar. In the case of most plants, including white and alsike clover, a moderately wet spring followed by fine, warm weather when the plants are in full bloom, produces the best results. In such a season it is not unusual to get 150 pounds of honey per colony in a good clover district. On the other hand, continuous rain or broken weather during the honey flow may prevent the production of any surplus honey. We cannot forecast the weather in any part of the country, so that the honey crop is as uncertain as any farm crop. In 1915 the highest yeild per colony from clover was obtained in Nova Scotia; in Ontario the crop was only moderate, and in the lower mainland of British Columbia a failure. In 1916 Nova Scotia gave less than the average, Quebec, Ontario and Manitoba far above the

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Good Fertilizer will increase the crop, produce better quality and give a higher market value. The best investment a farmer can make right now is FERTILIZER. Buy your supply early as there is shortage of raw materials and you can also get better freight service now than later in the season.

Bigger Crops, Better Quality, Higher Prices
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"Best-by-Test" FERTILIZERS

This brand of Fertilizer is noted for high plant food value and the analyses are guaranteed in every bit of it sold. Write for free book on Fertilizer giving information as to kind and quantity to use for different crops. Farmers club together and order in carload lots and get special rates. Full particulars on request. Local Agents wanted.

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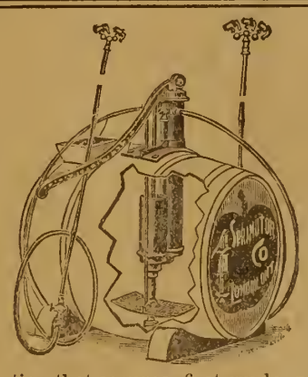

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SOW ALL YOU CAN

The earlier you pick your choice of favored brands, the larger choice you have to pick from. The year 1918 will be a noted one for the price of crops and vegetable produce of all kinds.

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is now ready for our customers all over the Dominion. Write in at once for it, and send your orders on as early as possible. Catalogue free from

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Seed & Grain
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(Patented 1901)
The best and latest mill for Cleaning and Grading all kinds of Seed and Grain.
See nearest Agent or write for Catalogue to
THE TEMPLIN MFG. CO., FERGUS, ONTARIO

FRUIT PACKAGES

The fruit season is again drawing near, how about your boxes and crates for the coming season To pack and ship to the best markets, you require the best standard packages, which can be had by placing yopr orders early with the

Hantsport Fruit Basket Co'y.

HANTSPORT, N. S.

Minard's Liniment Co., Limited.

Gentlemen,—My daughter, 13 yrs. old, was thrown from a sleigh and injured her elbow so badly it remained stiff and very painful for three years. Four bottles of MINARD'S LINIMENT completely cured her and she has not been troubled for two years.

Yours truly,
J. B. LIVESQUE.
St. Joseph, P. O., 18th Aug., 1900.

average, and the lower mainland of British Columbia again a failure. In 1917 Nova Scotia recorded a failure; southern Ontario almost an average; Quebec and Manitoba below the average and the lower mainland of British Columbia a bountiful crop. The shifting of the good yield from one region to another was due to weather conditions. In the aggregate returns, however, Ontario and Quebec led, the Maritime Provinces came next, and British Columbia third, a comparison of considerable importance to the specialist but less to the amateur.

The rise in sugar has ben reflected in the honey market. In the last two years the demand for honey has been very great; the price has risen 3 to 5 cents a pound within the past few months, and white extracted honey at the time of writing is being quoted at 14 to 17 cents per pound wholesale.

Bee-keeping neds but little capital, can be carried on anywhere, even in a vacant lot in the city, and is not particularly laborious. The bees require attention only in pleasant weather, knowledge and foresight being needed to do all that is necessary until the weather is again likely to be favourable.

PREPARE TO PROTECT YOUR CROPS NEXT SEASON

Throughout the country there was a splendid response during 1917 to the call for increased agricultural production. Larger crops were raised on the farms, and city dwellers by the cultivation of gardens and vacant lots contributed greatly to the success of Canada's efforts to relieve the world-wide food shortage. Greater production of food supplies than ever is required next year, for field crops are not only required to meet immediate human needs, but increased production of hogs, dairy products, and beef are dependent upon such crops.

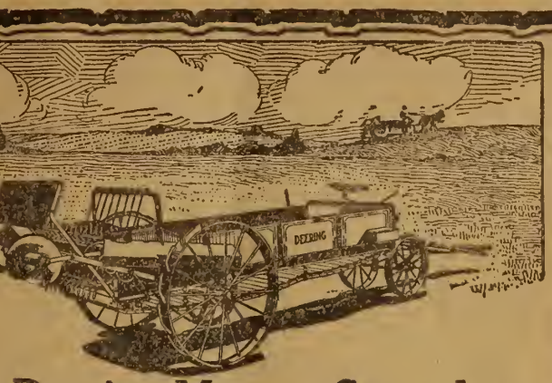
The production of maximum crops demands constant watchfulness and effort on the part of the farmer, fruit grower and vacant lot cultivator in order that such crops may be protected from the numerous pests that attack them. We repeat: "Crop protection means crop production." Insect pests destroy annually from 10 to 25 per cent. of all crops grown. The total loss to the country is enormous; if we express the aggregate loss inflicted annually by insect pests to the field crops of Canada in terms of wheat we find the total loss is sufficient to feed the entire population of the coutry for one year. Much of that loss can be prevented. At the present time it is incumbent upon us to take every means to prevent it. Insects can be as effective as enemy submarines in destroying food suplies. Like submarines, they are insidious in their operation. They must be sought out and destroyed.

Now is the time to make preparations for the next year's offensive. To be prepared is half the battle. Lack of foresight and due preparation means disappointment and loss. The greater cost of production and the greater need of more crops makes crop protection all the more necessary. Utilize the present quiet season to make plans for next year's campaign. According to the crops that are grown and the insects that occur in your district make preparations now if preventing their ravages next season. Owing to the sudden demand during the period when insects were active last summer for insecticides such as lead arsenate, and Paris green, a serious shortage occurred in many places with consequent higher prices. This can be avoided if growers will obtain their requirements before spring. Insecticides are the growers' ammunition, ample supplies of which are necessary to a sucessful offensive. Fruitgrowers should now determine their requirements and take steps to meet them. Growers of potatoes and other field crops subject to insect attack should obtain supplies of the standard insecticides to meet their needs: arsenicals for insects such as grashoppers, potato-beetles, cut-worms and other caterpilalrs that devour the foilage; contact insecticides such as whale-oil soap and nicotine preparations for such insects as plant lice or aphids. All spraying machinery should be thoroughly overhauled, cleaned, oiled and in readiness for use when required in the spring, as the spring is a busy tiime for the grower. Such timely preparation will mean not only the saving of time—an important matter when labor is scarce —but it will also mean the saving of crops, for a few days' delay in applying preventative or control measures will frequently result in serious losses from insect pests.

When it is possible rubbish and trash of al lkinds should be cleaned up and burnt. A clean farm, orchard or garden means fewer insect pests. Weedy fences and fields and accumulations of rubbish provide hiding places for these crop destroyers.

It will be advisable to watch seeds of all kinds that are stored under

(Continued on page 334)



The Deering Manure Spreader
Light Draft — Wide Spread

A LOAD of stable manure is no light weight. Matted with bedding and litter, it is no easy job to tear it into small pieces for the kind of spreading that good farmers demand. Yet two horses can handle easily the 49-bushel load of a Deering No. 8 in all ordinary going, and will get the load off in a good even coat in three to four minutes. With its light weight, roller bearings, and beater parts kept in line by a strong steel frame, the Deering is a very light draft machine.

The work of tearing up the manure is divided between two beaters, one of which is a spiral that makes this Deering spreader a wonderfully efficient fertilizing machine. It spreads beyond the wheel tracks. It covers the ground evenly clear across the width of the spread.

Three sizes of Deering spreaders give each farmer a machine suitable for his farm—No. 8, 49 bushels; No. 5, 55 bushels; No. 6, 63 bushels capacity. See the local dealer or write the nearest branch house for illustrated catalogue showing all the good features of this Deering light draft, wide-spread manure spreader.

International Harvester Company of Canada, Limited
BRANCH HOUSES
WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.
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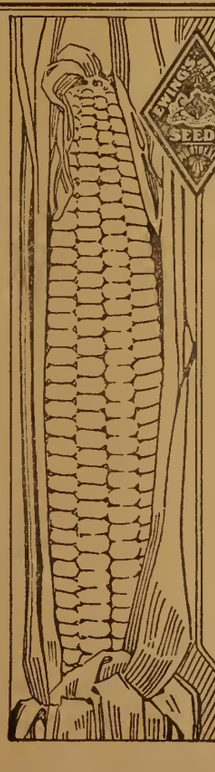

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as we understand and practice it, ensures to our customers fresh, vigorous seeds that are not only true to name, but come from the finest strains of each variety.

EWING'S SEEDS

give the liveliest satisfaction by their even germination, lusty growth, and splendid results, in quality as well as in quantity. They have been doing this for 45 years, so you can safely depend on them for this season.

Write now for our Illustrated Catalogue, and if your dealer hasn't Ewing's Seeds, order from us direct.

The William Ewing Co., Limited
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Ewing's "Golden Bantam" Sugar Corn

A small ear of remarkable quality, becoming more popular each year because of its extreme earliness, vigorous growth and surpassingly delicious flavor. Stalks dwarf and sturdy, bearing two or three eight-rowed ears of broad yellow grains. Lb. 65c.; ¼ lb. 20c. Sent postage paid—cash with order. 61

DAIRYING.

Editor Maritime Farmer,
Sussex, N. B.
Dear Sir:

Holstein sales have been very good this past fall and winter. Among recent sales were two real nice heifers to Mr. C. E. Hamilton, Lower Truro. One is a granddaughter of our old cow Locust Hill Nellie 3rd and is a very large, growthy heifer. Unless all signs fail she will make a cow that will be heard from later. The other is a daughter of Raylton Canary Major whose heifers areturning out great milkers. Several have milked from 13,000 to over 15,000 lbs. in one year with first calf as two year olds. Mr. Hamilton is a good stockman and we expect to hear about these heifers later.

Mr. F. M. Williams, Westchester Sta., got a nice heifer calf out of a daughter of Royalton Canary Major and by PrinceColanthus Canary B. also a bull calf out of Cobequid Helbon May, a very fine cow that is proving well at the pail. A bull each to Scott's Bay Agricultural Society, Margaree Harbor Apricultural Society and East Margaree Agricultural Society.

Our cows are milking well considering the chance they had. Our turnips were a poor crop last season and let me tell you right here we miss them. However, the cows are averaging apout 33 lbs. a day and we have a lot of first calf heifers among them, which hauls the average down.

Miss La Handa dropped a dandy bull which we intend keeping for a herd bull. He is a beauty.

Prince Colanthus Canary B. is developing into a very fine bull, his granddam, Madame Porch Pauline finished a years record of over 28,000 lbs. milk, her second record over 28,000 lbs. in a year. The calves sired by him are very promising, well marked, low set and straight.

Yours truly,
A. E. DICKIE.

THE COST OF MILK PRODUCTION AND THE FARMER'S PROFIT

The principles of cost accounting used in manufacturing should be applied to agriculture, ,not that the farmer may always sell above cost, for at times he sells below cost, but that he may know that the average selling price will at least equal the cost and thus allow him to break even. Were the results of such cost accounting for the business of milk production known to the farmer as well as the consumer, the former would bestir himself to reduce his cost while the latter, recognizing the narrow margin of profit upon which the farmer is working in producing a staple food product, would cease his blind criticism and be willing to pay a fair price for milk which is one of his cheapest foods.

To find the cost of milk production is no sinecure in accounting, ,because of the complexity of the conditions surrounding the industry, but the importance of the product has led to many investigations with the following average results, using present day feed and labour charges,—

Expenditure per Cow

Feed at cost prices	$ 82.90
Labour per cow including handling of milk	55.27
Interest and depreciation on herd per cow, $110 at 11%	12.10
Interest, insurance, repairs and depreciation on buildings	8.72
Depreciation on equipment	.50
Losses from abortion, tuberculosis pneumonia, etc.	1.95
Veterinary services and drugs	.86
Cash sundries	1.96
Added interest of owner in excess of that exhibited by hired help	6.00
Total	$170.26

Receipts per Cow

6167 pounds of milk at 29c per gallon	$178.84
12 tons manure at $2.00 per ton	24.00
Total	$202.84

Under the above conditions milk costs the farmer 27.6c per gallon or 6.9c per quart. At most he is selling it for 29c per gallon or 7.25c per quart. The profit left to the farmer is very little over the value of the manure for his farm. In one investigation conducted on twenty-five dairy farms keeping on an average of 460 cows, the average profit per cow per year was $8.23 while out of the twenty-five dairies 28% reaped no profit whatever.

While 6,167 pounds of milk per cow per year may seem a small yield to some farmers, it is in reality a very good average, exceeding the average for Eastern Canada by 2,000 pounds. The farmer's remedy lies in increasing the average production of his herd.

A Word to the Consumer

one of the cheapest foods. Instead of being regarded as a luxury it should be regarded as a necessity. Based on food values it has been estimated that if porterhouse steak is worth 30c per pound, milk is worth 16.5c per quart; if eggs are worth 30c per dozen, milk is worth 21c per quart; if fat fowl are worth 20c per pound, milk is worth 20c per quart; and if white fish is worth 18c per pound, milk is worth 32c per quart. No common meat food is cheaper than milk at 15c per quart. Moreover, milk is an already prepared food, requiring no fuel to cook it, a most important consideration under present fuel conditions.

The question is "Who is getting the best deal?" Certainly it is not the farmer.

FROM THE HOLSTEIN-FRIESIAN ASSOCIATION, BRATTLEBORO, VERMONT

The large size of Holstein cows not only enables them to yield in such enormour quantities as to give them all records for milk and butterfat production, but is in itself a decided advantage in these days of high beef prices. The ultimate destination of all cows is the butcher's block, and the heavy Holstein is winning laurels here over the smaler cows as she does at the pail.

A purebred registered Holstein heifer, 2 years, 10 months of age, which has been found worthless for breeding purposes, was recently sold at the Buffalo (N. Y.) Stock Yards for $201.45. She weighed 1580 lbs. and brought 12¾ cents a pound. She had been bred to freshen last May and was being fitted for a test, but as the time of her parturition approached she did not make up any udder. Upon examination by a veterinarian it was found she was carrying a mummified calf. She was kept until fall and then disposed of for beef.

In these days when every scrap of food is worth its weight in gold the several hundred pounds more weight of the Holstein cow is a factor to be reckoned with in selecting dairy stock. In many instances the difference in weight will make a difference in price paid by the butcher sufficiently large to pay the difference beteween the initial cost of a purebred Holstein and a "scrub."

THE QUEEN OF THE DAIRY WORLD IS DEAD

The great purebred Holstein, Duchess Skylark Ormsby, who made the world's record for all breeds of 1506 lbs. of butter, 27,761.7 lbs. of milk in one year, is no more.

Duchess Skylark Ormsby was calved October 31.1909. She was owned by R. B. Young, Buffalo Center, Iowa. She freshened first at 2 years, 1 month and 3 days old. She was put on official test, making the creditable though not noteworthy record of 17.50 lbs. of butter, 380.2 lbs. of milk in seven days. Continued for the year, she made the fine record of 731.1 lbs. of butter, 18,966.5 lbs. of milk as a junior two-year-old. She then passed into the hands of John B. Irwin, Minneapolis, Minnesota, and for him, at 5 years and 3 days old she made 34.36 lbs. butter, 588.1 lbs. of milk in seven days. It was then decided to run her for the full year. 327 days after freshening she produced 23.75 lbs. of butter, 469.2 lbs, milk. November 9. 1915 it was officially announced that she had established a world's record with the tremendous output of 1506 lbs. of butter, 27,761.7 lbs of milk in 365 days. This exceeded the previous world's record of 1470.59 lbs. of butter held by the Holstein cow Finderne Pride Johanna Rue.

The champion was but eight years old at her death and her loss is a great one, not only to her owner, but to dairymen and breeders generally.

Her only living son, Sir Ormsby Banostine Champion, is in active service and his sons and daughters have every indication of perpetuating the beauty symmetry, constitution and persistent milking qualities of his great dam.

STABLE MANNERS THAT INCREASE MILK FLOW

Every conscientious dairyman knows from experience, how difficult it is to secure in his hired help men who at all times will treat his animals with consideration. The dairy cows has been called a machine—and in a very true sense she is such. But a cow cannot be treated like a machine. She is a bundle of nerves. The disturbance of her nervous equilibrium upsets her production. For this reason harsh treatment has no place in the dairy stable. Kindness and gentleness are essential at all times. Years ago a certain dairyman put up a printed notice in his stable urging his men to practise patience with his animals. The sign is still there preaching its little sermon to the men who come and go on this particular farm. It reads as follows:

"The rule to be observed in this stable at all times towards the cattle, young and old, is that of patience and kindness. A man's usefulness in a herd ceases at once when he loses his temper and bestows rough usage. Men must be patient. Cattle are not reasoning beings. Remember that this is the Home of Mothers. Treat each cow as a mother should be treated. The giving of milk is a function of motherhood; rough treatment lessens the flow. That injures me as well as the cow. Always keep these ideas in mind in dealing with my cattle."—O.C.

UDDER TROUBLES GENERALLY ARISES FROM INJURIES

Many udder troubles are due to injuries. The cow owner may not always realize this nor be aware of the different methods by which a cow can injure herself. High door sills, running the cows when their udders are full, requiring them to lie on cold floors or frozen ground are all prolific sources of trouble. Some cows have very low-hanging udders that drag when they step over obstructions in their paths. Here is where high door sills may be injurious. The udder

Ten to Fifteen Acres Per Day

THINK what it means in a late season to get your plowing, harrowing, seeding and harvesting done thoroughly and quickly—and at a remarkably low operating and up-keep cost. Instead of costly feed for horses, taking many acres away from your available land to supply, you reap these big advantages, not with expensive gasoline, but with cheap coal-oil! That is the fact that is compelling thousands of farmers to adopt the

Happy Farmer Tractor

Model A—8-16 H.P.
Model B—12-24 H.P.

The saving between coal-oil and gasoline alone would pay handsome dividends! But when you compare with the cost of operating by the old fashioned horse method, no wonder Happy Farmers are in use everywhere.

Size, weight, simple construction and ease of handling all prove to the most exacting farmer that here at last is the ultimate tractor for the farmer. For instance, Model B with 2000 pounds draw-bar pull does the heaviest of plowing easily with a weight of less than 4000 pounds. That means economy all around. Yet the machine is light enough to handle the harrows, drills, and seeders over soft ground without packing the soil.

Any farm lad can run this simple tractor with few parts to get out of order. It will turn around within its own space. It turns sharp corners and plows right up to the fence.

Model B delivers 24 horsepower for every kind of legitimate farm belt work handily. For those who prefer less power, Model A delivers 8 h.p. at draw bar and 16 h.p. for belt work.

Write for prices, terms and full descriptive literature.

The Renfrew Machinery Co., Limited
Head Office and Works: Renfrew, Ont.
Eastern Branch: Sussex, N.B. Branches almost everywhere in Canada.
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Adds Quality to Every Pound of Butter

Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED 223

striking the sill is bruised and an inflammation is set up that may result in the loss of the usefulness of the animal unless properly cared for. Sometimes injuries of this sort are received in the pastures by the cows stepping over logs, stones, brush, etc. and the only way to avoid them is to remove such debris from pastures and barn lots.

Lying on cold floors or on the bare ground may not bruise the udder, but it chills this organ so that it becomes congested and inflamed. This can be prevented by providing the cows with plenty of clean dry bedding at all times and keeping them in the stable during severe weather and at nights. Sometimes a bad bruise may be sustained by an animal that is kept closely stabled. Her udder may be stepped on by the cow in the next stall. This is particularly liable to happen in certain types of stalls and with cows that have large udders.

Cows should never be hurried when driven from the pasture. The well-filled pendulous udder will swing from side to side and be bruised. No doubt many cases of bloody milk and so-called garget are caused by driving the cows with dogs or by unthinking persons. If more care were taken in the handling of milking cows there would be less complaint from udder troubles.

A COW DEAL

Bought a cow t'other day;
Man was getting short of hay.
Rather sell his wife, he said,
Or part with anything he had,
But his hay was getting low,
And the cow had got to go.
"Such a cow," says he to me,
"Is something that you seldom see;
Gives two pails twice a day,
Only eating medder hay.
Give her shorts and cottonseed,
Another pail you'll surely need.
Butter that 'ere cow will make
Can't be beat in Canada.
Her mother took first money at
The country fair for butter-fat."
I shaved him ten and took the cow,
Wish I hadn't done it now.
Felt like I'd been stealing sheep,
'Cause I got that cow so cheap.
Of course it wa'nt exactly right
To take advantage of his plight,
But turn it round and I could see
That he would do the same to me.
I took her home and gave her feed
Of ensilage and cotton seed.
Could hardly wait for milking time
So as to try that cow of mine.
I won't attempt express my thoughts
But all I got was just three quarts.
Yet he told the truth, when, says he,
A cow like this you seldom see,
For her udder was bigger when done
Than it was before I had begun;
But strip and strip, it was no use,
There wasn't another drop of juice.
Next cow I buy I will not fail
To inquire the size of the milking pail.
—Exchange.

BADLY ADJUSTED SEPARATORS CAUSE LOSS

Butter-fat and profit may be run into the skim milk can if the separator is not properly adjusted. One Wisconsin creamery man has found, by repeated tests, that skimmed milk obtained upon farms where hand separators are used oftentimes contains large percentages of butter-fat, amounting in some instances to one-fifth of that produced by the farmer's cows.

Frank Swoboda, agricultural representative of the United States Department of Agriculture and the College of Agriculture of the University of Wisconsin for Langlade county, has found that many farmers in his section are losing money by running cream into the skimmed milk. His tests, made co-operatively with local creamery men, showed losses which warranted him in carrying on a campaign for the more efficient use of farm separators.

C. E. Lee of the University Dairy School, has assigned six causes for the loss of fat in milk: First, the separator may not be standing level upon a firm foundation; second, the bowl may be out of balance and vibrating too much when in operation; third, the bowl may not be operated at full speed (if the speed of the handle should be forty-eight or sixty, as is indicated by the book of instructions, it must be maintained at that rate during the separating, and, if other than hand power is used, the speed of the bowl must be the same; fourth, skimming milk that is too cold (milk should be separated immediately after each milking;) fifth, the cream outlet may be partially stopped, due to improper cleaning of the separator; sixth, the bowl may be too low or too high. If too low, it is due to the parts being partially worn, or in removing the bottom parts for cleaning and not readjusting the height of the bowl to its original position.

THE DAIRY SITUATION

The farmers of America have always had one problem to solve and that is the problem of greater fertility, or the maintenance of the life-giving elements in the soil. Today that same problem is facing them more than it has ever done in the past. When feeds were cheaper and labor plentiful a farmer could, perhaps, keep cows that did not yield an abundant porfit, without himself becoming bankrupt. Today he must get ample returns for every dollar that is invested in barns, equipment, feeds and breeding stock.

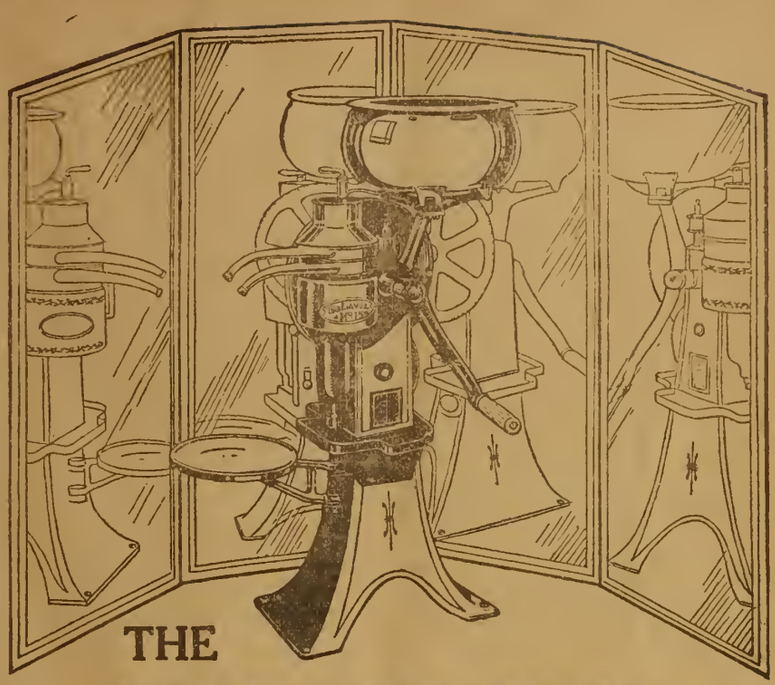
Ae fe wyears ago these investments were of a nominal figure. Today they run into such proportions that they almost force the man who would like to be a farmer to hesitate long and think seriously before he undertakes the step.

The man who is able to produce milk and butterfat at a profit in the fact of the conditions mentioned above must have nothing but the very best of dairy cattle. That means that the prospects for breeders of high class dairy stock were never brighter than they are right now.

We can no longer blind ourselves to the actua lconditions. Cost sheets must be kept even though they are ont as complex as the one that finds a place on the manufacturer's desk. The farmer, however, is a manufacturer and when he faces the situation squarely he will see that it is ncessary to know first of all what each cow is giving, then he will determine for himself which are the cows he must keep and finally he will replace the non-producers with those that make a profit every day. The man whh has such stock to sell is indeed fortunate. The future is bright for him.

BUTTER MAKING

The annual statement of the Pictou County Dairy Co., Ltd., in connection with the work at the Stellarton Creamery has been issued and the shareholders are to receive a dividend of 7 per cent. The concern did a largely increased business over the preceding year. No less than $41,233.94 was paid out to the farmers for cream and $1,705.90 for milk. The butter sales amounted to $43,466.87 and at the close of the year there was butter on hand worth $7,045.58. The other sales of product for the year were milk $2,080.55; buttermilk, $1,629.49; and sweet cream sales, $1,286.18.



THE NEW DE LAVAL CREAM SEPARATOR

Every Reflection Shows Perfection

VIEWED from every angle, the De Laval is distinctly in a class by itself. It has a business-like appearance. It looks as if it were well made, and it is. It looks sturdy, and it is. There is no make-believe about it anywhere, from the wide-spreading substantial base to the solid, seamless, symmetrical supply can.

It's no wonder that big dairymen and creamerymen who have for years made a careful study of dairy methods and machinery refuse to consider any other separator but the De Laval. They know that from every angle—clean skimming, ease of operation, freedom from repairs, durability—there is no other cream separator that can compare with the De Laval.

They know that it has a record of 40 years of service behind it. They know that it can be depended upon. They know that they can't afford to take chances with any other cream separator—

And neither can you.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office as below.

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butter-Workers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

FARMERS AND BREEDERS

Who wish to keep their horses and cattle strong and healthy, should always have on hand a supply of

OMAZON

The Canadian medicinal stock food for Horses, Cattle, Sheep, Hogs and Poultry.

It will help to economize on feed and owing to its sovereign tonic and curative virtues will keep the stock strong, healthy and free from many ailments.

Order from your dealer. If he hasn't it in hand, he will be pleased to obtain it for you.

DR. ED. MORIN & CO., Limited, Quebec, Can.

LIVE STOCK.

CO-OPERATIVE MARKETING OF WOOL MEANS

1. That wool is graded according to quality and paid for on the same basis.

2. All the wool is accumulated at one or two central points where the grading is done.

3. The grading is done by experts from the Sheep and Goat Division, Department of Agriculture, Ottawa.

4. The wool is taken direct from the sheep. Tub washed wool is not accepted. Why Because the mills divide a fleece into parts acorcding to quality and length, each part is used for a certain purpose. They cannot separate the different parts when it is tub washed.

The Advantages to be Derived

1. A large amount of graded wool at one point attracts the attention of buyers from the yarge woolen mills.

2. Outside competition forces local buyers to pay a higher price.

3. The wool growers are not at the mercy of country peddlers. Co-operative marketing means the elimination of several middlemen.

4. Organixed selling considerably reduces the overhead expenses which have to be borne by the producer.

5. Marketing wool co-operatively results in beter wool being produced because price depends on grade. It also results in better care of the sheep.

6. The flat rate of so much per pound irrespective of quality will be displaced. The wool grower with clean, dry wool will receive a premium for his trouble.

Plans of the New Brunswick Department of Agriculture for the Marketing of the 1918 Wool Crop Co-operatively

1. Lectures will be delivered at the various Agricultural Societies, all the different phases of the subject will be discussed. Lectures will also bc delivered in sheep districts not served by Agricultural Societies, thus giving them oportunity to market their wool in the modern way.

2. The secretary of the Agricultural Society will be the medium through which all correspondence will be transacted.

3. Wool growers Associations will be formed in districts that are not served gy Agricultural Societies, providing five or more members can be secured and officers elected. The forms and regulations governing the formation of such a Club can be secured from the Provincial Department of Agriculture upon request.

4. Fredericton and Moncton will be the two grading centres for the Province.

5.All wool wil lbe weighed in at the grading stations on tested scales.

6. .Farmers selling wool co-operatively will be issued a cheque for about three-quarters of the value of the wool. The balance will be paid when the wool is sold.

Co-operative Wool Sales in Other Parts of Canada

1. The co-operative method of marketing wool is general throughout all the provinces of Canada except New Brunswick. In 1917 over 2,000,000 pounds of wool was marketed co-operatively in Canada. Nova Scotia farmers marketed 36.000 pounds; Prince Edward Island 24,000 pounds; Quebec 213.000 pounds; Ontario upwards of 400,000 pounds; Manitoba 200.000 pounds; Saskatchewan nearly 500.000 pounds; Alberta between 300,000 and 400,00 pounds.

2. Last year Prince Edward Island farmers sold 24,000 pounds of wool co-operatively at an average price of a little over 70 cents per pound.

3. Each year the amount of wool handled by the various co-operative wool associations throughout Canada has increased.

4. The enterprising farmers of the Sussex and Studholm district, of Kings County, N. B., have marketed their wool co-operatively for three years in succession. Last year the Sussex and Studholm Wool Growers Association marketed 4.000 pounds.

Care of the Sheep

1. Keep the sheep as clean as possible during the winter months. Feed hay, etc., in racks and do not allow litter to fall on sheep when feeding. Keep pens well bedded. Trim to prevent manure collecting on hind quarters.

2. The flock should be kept thrifty.

3. Protect from storms and draughts.

4. Shear in the spring before the new growth commences.

Preparation of the Wool

1. Shear on a clean floor. Clean wool means a higher grade. Watch for chaff, timothy heads, burrs, etc.

2. Shear the sheep when dry and keep the wol dry. Damp wool will mildew in storage.

3. Tub washed wool will not be accepted.

4. Tage, matted locks, etc., should be clipped from the fleece previous to shearing and packed separately. If ont, they will lower the grade.

5. After the fleece is sheared turn it over, turn in the sides of the fleece and roll from both ends until they meet in the centre. The clipped surface must be on the outside when the fleece iis roleld.

6.. Tie each fleece separately. Use paper twine for this purpose. (It will be supplied.) Do not use any other material for tying the fleece. Keep all black and grey fleeces separate.

2. The wool must be packed in sacks.)These will be supplied.)

8. To prevent trouble each sack of wool should be provided with two tags one inside and one outside, containing owners name and address. (These will be provided.)

Study this phamphlet carefully. If you haven't an Agricultural Society in your district, organixe a Wool Growers Association. Market your wool in a modern way. The members of an Agricultural Society or Wool Growers Association could well afford to co-operate and purchase a shearing machine.

CANADIAN CO-OPERATIVE WOOL GROWERS

There was a time when wool sold at a very few cents per pound; a time when sheep raising was not the profitable industry that it is today. The increase has been due, it is true owing to war conditions, yet in no small measure is this increase due to co-operative efforts on the part of the sheep raisers in selling their wool products. Four years ago co-operative wool selling actually commenced. A few sales, here and there , were held previously but the development was started in an organized fashion over the entire country four years ago. The Federal Depratment of Agriculture, through the Live Stock Branch, at that time commenced an active propaganda to encourage the sheep industry and place upon a more staple and permanent basis by an agency to spread information in respect to the improved preparation of the wool, supplying the serviecs of expert graders to classify the wool and doing its utmost to develop co-operative sales. The results obtained may be shown from the following figures. In 1914 about two hundred thousand pounds of wool was sold ci-operatively in

Supplying the Demand for Royal Purple Calf Meal

This baby food for young animals is partially pre-digested, and can be fed to the youngest animals with perfect safety. It WILL NOT cause stomach or bowel trouble, which are serious ailments in young animals. Royal Purple is a sure preventive for scouring.

Calves Gain Rapidly Without Milk

When the calves are 3 or 4 days old they can be fed Royal Purple Calf Meal and raised just as well without one drop of milk. What prominent breeders remark:

Mr. Geo. W. Collins, Plainfield. Ont , writes:

"Gentlemen,—In regard to your Calf Meal, I think you have the best on the market, as people who have bought it give it great praise. Some have taken their calves off sweet milk, and feed them nothing but your Calf Meal and water, and say they are doing as well on it as they did on the whole milk."

To Whom It May Concern: Uxbridge, Aug. 5th

This is to certify that I have secured your "Royal Purple" Calf Meal from our druggist. Mr. T. C. Nicholls, of Uxbridge, and can speak of this meal in the highest terms. I have used other calf meals, but this one is the best I ever tried. I never saw a calf gain more rapidly and thrive better than mine did while using your "Royal Purple" Calf Meal. I can cheerfully recommend it to all our stockmen who wish to raise large, healthy calves."—Stanley W. Croxall.

Note—The above Mr. Croxall keeps a large herd of pure-bred Holstein cattle, and is an excellent authority ou Calf Foods.

Royal Purple Calf Meal is equally good for young colts, lambs and young pigs. Put up in 25-lb., 50-lb. and 100-lb. bags. Secure it from our dealer in your town.

W. A. Jenkins Mfg. Co., Ltd., London, Can.

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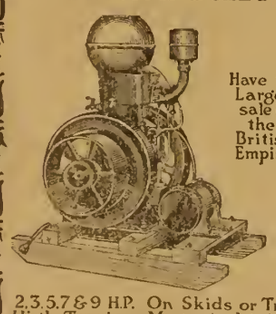
FREE BOOK

Send for our 80-page book which describes the common diseases of stock and poultry; also methods of feeding and our many products. Get a copy to-day.

LISTER

The name that stands for Quality in Farm Machinery

LISTER ENGINES ARE BRITISH BUILT

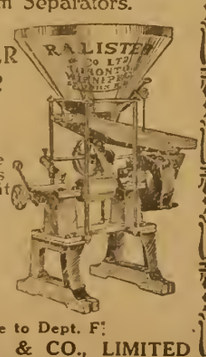


Have the Largest sale in the British Empire.

2.3.5.7 & 9 H.P. On Skids or Truck. High Tension Magneto Ignition. Automatic Lubrication.

Lister Silos, Ensilage Cutters, Threshers, Sprayers, Milkers, Electric Light Plants, Melotte Cream Separators.

THE LISTER GRINDER



Write for price of our famous Grinder Outfit comprising 5 H.P. Lister Engine and a 934 Lister Grinder.

Write to Dept. F.

R.A. LISTER & CO., LIMITED

TORONTO, ONT.

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

Read My FREE Offer:

To Mothers of Daughters, I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten days' trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS, Box 309 Windsor, Ontario

organized in every province and were attaining fairly successflu results by offering wool ofr public sale en bloc, after it wasg raded. Owing to the conditions of manufacture in Canada whereby this is centered in Eastern Canada and some classes of Canadian wool canot be utilized for manufacture in Canada many of the associations realized the necessity of creating a central selling agency or medium in order to insure the highest return for their wool and minimize the expense. At a meeting held in Toronto, February 5th, 6th and 7th which represented growers from every association in every province in Canada a co-operative company was organized for this purpose known as the Canadian Co-operative Wool Growers. It will have its head office in Toronto where a warehouse will be established and will make direct connection with Boston and Great Britain. The officers of the company are as fololws: President, Col. R. McEwan, London, Ont.; First Vice-President, James D. Wilson, Maple Creek, Sask.; Second Vice?President, Stanley Logan, Amherst, N. S.; Directors, Geo. C. Hayes, Kamloops, B. C.; J. W. Renton, Calgary, Alta.; Levi Harker, Magrath, Alta.; J. H. Follett, Duval, Sask.; J. D. Wilson, Maple Creek, Sask.; George Gordon, Oak Lake, Man.; Col. R. McEwen, London, Ont.; W. A. Dryden, Brooklin, Ont.; Geo. L. Telfer, Paris, Ont.; J.A. McClary, Lennoxville, Que.; J. R. McDowell, Shawville, Que.; M. St. Marie, Hoe's River, Que.; Angus M. Avard, Sackville, N. B.; Stanley Logan, Amherst, N. S.; Wm. McGregor, Central Lot 16, P. E. I.; Secty-Treas. G. E. O'Brien,, Toronto.

The company is very representative of all sheep raising districts in Canada Canada; in 1915 this amount was a little more than doubled; in 1916 a million and three quarter pounds were sold co-operatively and in 1917 over two million and a half pounds.

Associations for this purpose were and will be directed by men actively engaged in sheep raising and in present existing wool growers' associations. The organization represents a step in the right direction and will work in full for the benefits of the wool growers. Every grower in Canada who has not already sold co-operatively should connect himself with a loca lasociation and in that way he can assure himself a higher price than he could obtain through individual selling. By supporting the local association he supports the ntaional organization. It will mean the placing of the sheep industry in Canada on a higher and better plane.

SKIN DISEASES AND PARASITES MOST PROLIFIC SOURCE OF UNTHRIFTINESS AMONGST CATTLE

Skin diseases and parasites in cattle, while not directly dangerous to life are a most prolific source of unthriftiness amongst all cuasses of domestic animals and in no disease is an "ounce of prevention worth more than a pound of cure" than in that which controls and prevents the spread of contagious skin diseases, which are in almost allcases coused by parasiites.

One of the most common of these is blue lice. Their development is rather peculiar. Sometimes there will only be a few present for a considerable period, when suddenly they will break out in epedemic form and infest the whole herd. No herd or flock will thrive properly when they are infested with these pests and the only way to guard against them is to keep on the watch for their appearance and adopt prompt measures to eradicate them.

There are several remedies in the market which are more or less effectual such as tobacco, coal tar preparations, etc., but for ease of application, cheapness and effectiveness we have never used anything for cattle equal to common builders' cement and hellebore.

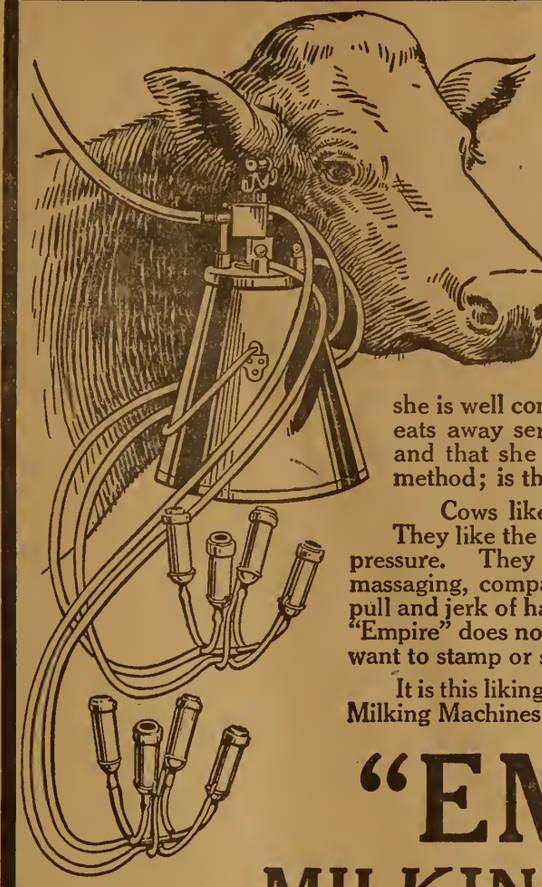
The way to use it is to mix thoroughly one part of helelbore with four parts of cement, by measure, and with an old pepper box or tin can, with a number of small holes punched in the lid, sift it on the animal from head to tail anlong the spine and on each side of it.

Previous to the application the hair should be cleaned so that the mixture will be readily worked down to the skin and over the body. In a week or ten days repeat the operation to catch the nits that will escape the first dose. Two applications are all that are usually necessary, but it will be advisable tokeep watch for some time or give a third application. The remedy is so cheap and easily applied that one should take no chances of any of the pests being missed. Indeed it will be a wise precatution to use this remedy every fall soon after the stock is put into winter quarters as a preventative against an outbreak.

Mange in Cattle

Mange in cattle is more common than most people suspect. It is caused by a germ or parasite working down into the skin and steting up the disease. An animal with it should be

(Continued on page 334)



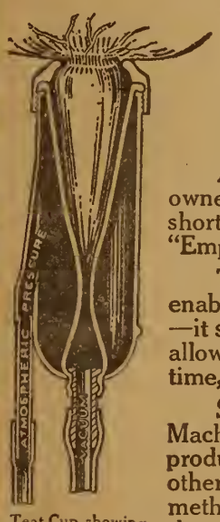
The Cow is the EMPIRE'S Best Salesman

THE cow can't tell you, in words, why she likes the "Empire" way of milking—why she prefers it even to the most careful hand milking. "Actions speak louder than words." The fact that she is well content to be milked with the "Empire;" that she eats away serenely as the "Empire" brings down the milk; and that she gives more milk than if milked by any other method; is the best proof that she likes the "Empire".

Cows like the way the "Empire" massages the teats. They like the smooth, even motion of the vacuum and air pressure. They like the steady regularity of "Empire" massaging, compared with suction, or the irregularity and the pull and jerk of hand milking. And, cows get to know that the "Empire" does not shout, or thump them on the side when they want to stamp or switch the tail.

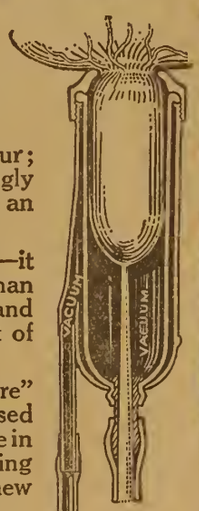
It is this liking—this contentment—that makes the "Empire" Milking Machines show such excellent results.

"EMPIRE" MILKING MACHINES



Teat Cup showing walls expanded.

are solving the hired help problem for thousands of farmers—reducing the cost of milk production—taking the drudgery out of dairying on hundreds of farms throughout Canada and United States,—why not on your farm?



An "Empire" Machine milks twenty to thirty cows in an hour; owners of smaller herds will finish their milking in a correspondingly shorter time. A ten or twelve year old boy or girl can operate an "Empire" Milking Machine without trouble.

The "Empire" is always on the job, and always ready—it enables the farmer to be practically independent of the hired man—it saves hours of valuable labor for other work each week—and allows him to handle a larger herd with a smaller investment of time, labor and energy.

Shrewd farmers and dairymen are installing "Empire" Machines, recognizing the need for, and profit in increased production of all farm produce. Shortage of labor and advance in other expenses makes economy and greater efficiency in operating methods necessary. You would install an "Empire" if you knew them as these farmers do.

We would like to send you our literature, without cost or obligation on your part. Send in the Coupon.

The Empire Cream Separator Co. of Can. Ltd., Montreal, Que.
Gentlemen:—
Please send me, without cost or obligation on my part booklets about the Empire Milking Machines. I have..... cows to milk.
Name.....
Address..... K

The Empire Cream Separator Co. of Canada, Limited,

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76

AYRSHIRE CATTLE

are heavy milk producers, rick in butter fat and very prolific.

Write for Booklet

EVERY FARM SHOULD HAVE AN AYRSHIRE

W. F. STEPHEN, Secretary
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Box 504 Huntington, Que.

GENUINE DIAMONDS
CASH or CREDIT
Terms: 20% Down and $1--$2--$3 Weekly.
We trust any Honest Person
Write for Catalogue o-day
JACOB BROS., Diamond Imp., 15 Toronto Arcade, Toronto

THE HORSE

WORKING THE BALKY HORSE

(By J. F. Cox of Arkansas)

The horse had balked in town, and the usual crowd had gathered with the usual suggestions. It has always been a mystery to me why men who probably never drove a horse 100 miles in their whole lives will "butt in" and undertake to tell the driver just what ought to be done when a horse refuses to pull.

A number of "sure cures" had been tried and had failed. One man tied a rope to the horse's fore foot and attempted to start him by pulling the foot forward. Some one across the street called him, and he turned to another man standing near watching the performance with, "Here, take this and pull him out."

"Excuse me," returned the gentleman addressed; "I drive with the lines." The man was a teamster; I knew him well. I had never seen him fail to make a puller of the balkiest horse in a few days. I had seen him start a balky team time and again by simply picking up the lines and speaking to them just as he would have spoken to any other team.

I have thought that the secret of his success is that he always spoke to a team just as if there was not the leat doubt in the world that they would move right off. Somehow when you heard his cheery "Get up, boys," you always expected to see them go—and they usually did. People said he "had a way" with horses.

"Too Many Cooks"

"Why didn't you take the lines and drive that horse out?" I asked him the next day.

"Too much help," he replied; "too many know-it -alls butting in. You couldn't expect to manage a nervous horse under such conditions. I never try to do anything with a balky team with a great crowd gathered amout. I would tie them up and leave them half a day first."

I asked him one day to tell me the best way to start a balky horse.

"There ain't any one best way," he said. "The plan that works with one horse often fails with another. A lot depends upon the disposition of the horse. More depends upon the driver and the way he handles the lines than upon any other one thing. In fact, if the lines are properly handled from the start the horse won't ever balk—at least not one in 100.

"There are very few 'naturally' balky horses. It is the most natural thing in the world for a horse to pull. Why, I've seen 'em that would just go wild, almost, if they thought the load was about to stick on a hill or in soft ground. It wasn't the result of training, either; it wasn't the nature of the animal—the natural disposition of the horse unspoiled by abuse and mismanagement.

Depends on Driver

"No, sir; if the lines are in the hands of a man who knows his business, who understands horses and love them, you needn't often worry about their balking. Of course," he went, on "there are some horses that will stop on a hill occasionally with the best drivers."

"Then what do you do?" I prompted.

"Well, in the first place, I try not to let them stop. If he shows signs of balking, a quick turn to the right or left will often make him forget it. Pull him square across the road, if there's hoom, then pull him straight agan, alwayis with a gentle, steady pull, of course, and with a low-spoken cheery word of encouragement.

"Watch him closely, and if you see that he is going to stop anyway, try to beat him to it by stopping him yourself. Even if he stops suddenly without warning, it is best to say 'Whoa,' and put on the brake, if you are on a hill, just as if you had intended for him to stop all along. Never let him know that he has balked or stalled. If he is young and nervous this knowledge will excite him; he is apt to become unmanageable, and such horses are easily spoiled. If he is a 'hardened sinner' this method will still be th ebest, for any effort to 'make' him go will arouse his ire and only strengthen his stubbornness.

Spare the Whip or Spoil the Horse

"Uuless you know that a horse is stopping through sheer laziness, never never hit him with the whip or yell at him to 'gidday.' If he is nervous this will cause him to jump up against the traces, the weight of the load throws him back, and if he does not 'stay back' the first time he will usually continue to jump, and unless you have a mighty steady old horse hitched with him, or unless the man with the lines understands his business thoroughly, it is only a question of how many wild leaps he will make against the load before he quits for good.

"When you have stopped the horse and quieted him with a friendly word, climb out and fuss with the harness a minute. Pull up the collar and rub his shoulders, readjust the bridle—a buckle may be chafing somewhere. The easing from any discomfort will put him in a better frame of mind, a kindly pat or two may cause him to forget that anything unusual has occurred.

"Climb into the seat again, throw off the brake, and speak to the horse quietly, cheerily, givinig him a slight pull to either side of the road. Nine times out of ten, unless the load is exceptionally heavy, he will start right on.

"If he fails to go, or if he stops again, repeat the performance. This time try cutting the wagon over and backing him a few steps, let him stand a minute, and pull him the other way in starting. This will allow him to move a few feet without feeling the weight of the load."

Whipping a Last Resort

"What do you think of such methods as cording the ears, tying the tail to the sinigletree, and blindfoling "

"Well, I'd use them as a last resort," he said. "But I prefer managing them with the lines. Of course anything out of the ordinary, anything that will divert the horse's mind will often do the work. I'd try anything before I'd give up or use the whip."

"But there are plenty of horses that have to be whipped, and there are some that take the whip all right?" I asked.

"There are a great many horses that may be whipped into pulling, and I used to think that there were a few that could be started in no other way, but I am not so sure of it now. The horse that has to be whipped is usually the one that has always been whipped; they learn to wait for it. And the trouble with whipping is that it takes just a little more of it each time.

"I have known horses that could be started quicker with the whip than any other way—I have started them that way—but I notice that if you start a horse by whipping him one day he is almost sure to balk again the next. If you once undertake to conquer a horse by whipping, you never know where it is going to end.

"On the whole, leaving out the cruelty of whipping, I have about come to the conclusion that it never pays. Kindness and patience are the two most important things, especially patience. Whatever you do, never get in a hurry, or get excited, or lose your temper. Just make up your mind to 'outlast' the horse. Never give up, never take a balky horse loose from the wagon until you have made him pull, though it may sometimes be necessary to throw off all or a part of the load."

PLENTY OF HORSE POWER NEEDED

Maximum crop production requires plenty of horses, men and efficient farm machinery. Powerful draft horses do more to compensate for labor shortage than any other factor. Gang plows of two 14-inch bottoms, with five powerful draft horses, will turn from five to 5½ acres per day; will disk on a 20-wheel disk harrow cuting nine feet in width in the field, from 14 to 18 acres per day; and on a 20-hole disk seed drill will seed from 18 to 20 acres per day, and cover it in the same operation.

Horses weighing over 1600 pounds, each in working condition are needed, and five of them to each farm teamster employed. Where such heavy draft horses are not available, smaller implements are used, and the daily turnover in work accomplished falls t oapproximately half that which is being done by men with heavy teams and plenty of them.—[Wayne Dinsmore.

WHEN HORSES ARE POISONED

When a horse, out at pasture or in the stall, is found staggering in a dopey condition with the pupils of the eyes dilated, it is usually apparent that he has eaten something that does not agree with him. The cause, of course, is not always the same. Bulletin No. 26, Scientfic Series, of the Health of Animals Branch, Department of Agriculture, Ottawa, that can be had free on application to the Publications Branch of the Department explains at least one cause of this state of things. The authors, Messrs. S. Hadwen D. V. Sc. Pathologist, and E. A. Bruce, V. S., Assistant Pathologist, tell of experiments by which it was found that bracken was frequently at fault. They say a disease known as "staggers" has been prevalent on the Pacific slope for many years, and then proceed to detail the results of their research. To show the serious nature of the complaint they quote an instance in which of 24 horses, owned by 11 farmers, 16 died. Not only are the symptoms fully set forth, but the treatment that should be followed is given and the steps that should be taken for the eradication of the fern from the horse's feed, when er gathered in the field or supplied from the hay loft. The title of the bulletin is "The poisoning of Horses by the Commen Bracken."

HORSE STILL A FACTOR IN WAR

There is some work in war as well as on the farm that can be done only by the horse. It has been found that the motor truck cannot supplant the horse entirely at the front. Motor trucks take the supplies from the railroads to the distributing points but from here horse power is used in bringing up the supplies to the cooking places and the trenches. By a special order of the Secretary of War certain men have been detailed to care for the animals so that now there is one veterinary officer and 16 men to each 400 animals in service. It is estimated that 10 per cent. of animals

on the average are incapacitated and require veterinary supervision. To care for the 400.000 animals which will be required in the service 1.000 veterinarians and 16,000 men ranking from sergeant down to private, will be needed. Veterinarians from recognized veterinary colleges were permitted to take examinations for the Veterinary Officers' Reserve Corps and if successful were commissioned with the rank of second lieutenant. The 16,000 helpers came from all waks of ife and many of them were unacquainted with horses. People who are the best acquainted with animals treat them with the most consideration. In the interest of efficiency in the veterinary corps, horsemen, horse dealers and farm boys, in the regular and the draft army, are constantly being transferred to the veterinary corps.

The Recognized Specific of Diseases of the Horse

A sovereign remedy in powder form which cures, Coughs, Heaves, Colic, etc. It strengthens the work horse as well as the race horse, and enables them to do more and better work. It has been successfully prescribed by many veterinarians notably by Dr. J. D. Duchene, in many critical cases, where results have proved remarkable.

A 50c box will be sufficient for six days' treatment.

DR. ED. MORIN & CO., LIMITED, - - Quebec, Canada

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CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a **HUMAN REMEDY** for **Rheumatism, Sprains, Sore Throat,** etc., it is invaluable.

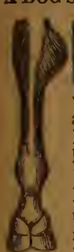
Every bottle of **Caustic Balsam** sold is Warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Toronto, Ont.

CHRONIC DIARRHHEA

W. C. M. has a mare that has diarrhoea and passes a great deal of wind from the bowels. She has a good appetite. Give one quart of raw linseed oil and two drams fluid extract of belladonna in it at one dose. After the physic operates give one dram each of sulphate of iron and sulphuric acid at a dose well mixed in a small bran mash. Feed the animal on good hay and oats and always water before feeding the oatts.

You Can't Cut Out
A BOG SPAVIN, PUFF or THOROUGHPIN, but



ABSORBINE
TRADE MARK REG.U.S.PAT. OFF.

will clean them off permanently, and you work the horse same time. **Does not blister** or remove the hair $2.00 per bottle, delivered. Will tell you more if you write. Book 4 K free. ABSORBINE, JR., the antiseptic liniment for mankind, reduces Varicose Veins, Ruptured Muscles or Ligaments. Enlarged Glands, Goitres, Wens, Cysts. Allays pain quickly. Price $1.00 and $2.00 a bottle at druggists or delivered. Manufactured only by W. F. YOUNG, P.D.F., 124 Lymans Bldg., Montreal, Can.

Absorbine and Absorbine, Jr., are made in Canada

MINARD'S
"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
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—Rev. Wm. Brown.

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—Mrs. S. Masters

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EQUIP BARNS WITH AIRY BOX STALLS AND SO DRIVE DISEASE FROM THE STUD

No barn is considered fully equipped that has not got one or more box stalls. A few box stalls around the barn, fixed up to receive either cow, sow, or horse, is indispensable where the interests of live stock are seriously considered in order to give the best results, with profit to the farmer. Even the best management and skill will sometimes fail to keep a herd or stud free from some trouble, once in a while, that does not erquire an isolation stall for a sick animal. The brood mare, the sick horse, the young colt, gets more near the natural surroundings in the box stall, and the same applies to all the other breeds of live stock on the farm.

Ventilation

To have a healthy box stall it must be well lighted and well ventilated. Bad ventilation is one of the chief causes of pleurisy and pneumonia among horses. All animal life on the farm requires oxygen from the air to enable them to resist disease. Sunshine and light are the greatest natural destroyers of all disease germs and to keep them out of the barn or box stall is to court failure in keeping live stock healthy. In close and badly ventilated box stalls a sick animal is denied the weapon that nature gives to every wild or outside animal, namely pure air and light. An animal in a sick condition is always a prey to the lurking germ and when placed in a dark box stall the condition is intensified. **Many of the diseases that afflict horse flesh is due to impure blood, and that state of blood can only be got around the farm in the dark, badly ventilated barn or box stall.** Sunshine and the free use of the oxygen in the air are free to every farmer, and it is of the utmost necessity for the health of live stock that farmers accept nature's gift and arrange their barns and box stalls accordingly.

Ventilation does not mean drafts; it stands for comfort, not over warm. A warm barn is generally a damp one, nad in a box stall this condition must be guarded against. It may require considerable readjustment in some cases to fix up the barn with a few healthy box stalls for the brood mares or growing colts, but in every instance time and energy so spent will soon produce vis,bie results in the general tone of the animals.

Light is essential to the healthy eyesight of the horse. It is not readily recognized by farmers in general that horses are not unlike the human family in the matter of eyesight, and being dumb are unable to tell of the weakness. There is a growing tendency, while domestication proceeds with the horse, towards weaker eyesight, and the dark, damp confined stall is one of the mediums that tend to cause this coudition. A dark stall for perhaps a week or so on end during winter, then turned out to drive one whole day in the brilliant sunshine that bathes a snow-clad country, is extremely bad practice. Where the box stall or barn is well lighted there is no sudden shock to the eyesight, and the normal condition remains uncharged.

Most box stalls that are built have plenty of area in square feet, but they lack in cubic feet; they are built with the ceiling toolow. **It is the cubic air space that counts for health in the box stall.** For instace a box stall that is 12 by 12 feet and 6 feet high gives 864 cubic feet of air space. On the same area and 8 feet high will give 288 more cubic feet and will thus be all the more adapted to impart health to the occupant.

For large horses and especially for breeding mares, box stalls should be at least 12 feet square. For a horse exceeding 1,800 pounds in weight, a stall 14 feet square will be none too large, at least 14 feet from manger to rear wall, and in width from 10 to 12 feet. For convenience it will be better to have the stall facing the feed alley same as the other stalls, thereby greatly lessening the work of feeding, being able to put in hay and grain while the other animals in the stable are getting their share. The manger should be in the form of a long box with the top about 3 feet from the floor and the bottom about one foot above the ground. The bottom of the manger should be made with narrow spaces between boards, through which chaff and dirt can fall. The feed rack

(Continued on page 332)

Order Farm Machine Repairs Now Delay May Mean Loss

HAVE YOU thought of the difficulty you are going to have this year in getting repairs for your machines? It is the most important thing for you to be thinking about right now. Your crops may depend upon it.

You, no doubt, realize that all manufacturers are hard put to it to get materials; and the transportation facilities, freight and express, are congested to such an extent that shipments go through very slowly.

The implement manufacturer and agent in Canada realizes this today and the utmost is being done to take care of the farmers' requirements for repairs. Unless the farmers are also foresighted, many of them are likely to realize the difficulty too when the season for field work opens. They are going to be greatly handicapped if they wait until just before they are ready to use the machines before overhauling them and finding out what parts will have to be replaced.

We cannot urge you too strongly to get busy on this at once. Overhaul every machine on your place and see just what parts you need to put them in good working order, then place your order at once. This is the only way you can be sure of having the new parts in time for use.

We are making every possible effort to get ample stocks of repair parts to convenient points where you can get quick service. International Harvester branch houses are located in all parts of Canada and they always carry large stocks of repairs. Besides there are thousands of local agents who carry a good supply of the parts usually called for. Under normal conditions, you could expect quick action on repair orders sent to us or to any of our agents, but at this time conditions are not normal and it is a personal and patriotic duty to look ahead and plan ahead and be prepared to avoid confusion and crop-wasting delays.

Remember the first orders received are the first to be served, so you can recognize the importance of overhauling your machines now and seeing what you will need and getting your order placed. Better be ready than sorry. Do it now.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

Two Extra Cans of Milk

Royal Purple Stock Specific will increase the daily flow of milk per cow, two to five pounds per day while in the stable. You simply mix this pure conditioner with the other meals you are feeding. Its action aids digestion, purifies the blood and improves the condition of stock.

Royal Purple Stock Specific

will put flesh on the poorest, most run-down animal on your farm. We stand back of this guarantee to the extent that we will refund your money if it does not give the desired results when directions are followed.

PUT ROYAL PURPLE STOCK SPECIFIC TO THESE TESTS: See if it will increase your milk flow. See if it will improve the condition of run down animals. See if it enables you to market pigs a month earlier. We know it does all these things. We ask you to try it—and benefit by its use. Sold by dealers everywhere in large and small packages.

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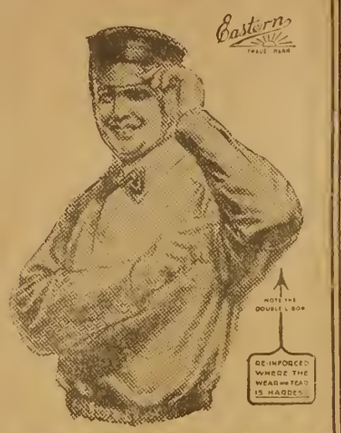

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POULTRY.

BUILDING UP A PROFITABLE POULTRY BUSINESS FROM A SMALL BEGINNING

By Mrs. George L. Russell.

I am a busy farm woman with the usual routine of farm work and children to care for, so I haven't had time, even if I had the ability, to work out the best feeding formulas. I am perfectly willing to take the advice of our experiment station and follow their method of feeding. I think we farm women should profit by their experience. I was also willing to take their advice when we wanted to build our poultry houses from time to time. Such houses are not an experiment but a success, for the poultry experts do not give out these ideas until they have tested them out and proven their worth. They also have given us very helpful information in selecting breeders that are of greatest benefit, and to all these suggestions I give credit for much of my success with poultry.

There is one part though, that I have found I could best work out for myself, and that is the marketing problem. For several years we followed the general practice of taking our eggs to the country store and receiving in exchange groceries and dry goods. We had no say as to what price we should receive—we took whatever price was offered. Our merchants in turn took whatever price the commission men offered them, and so on the eggs went from hand to hand, and they finally reached the consumer who paid much more for them than we, the producers, received.

I decided to try and find a better market for my eggs and wrote to several hotels, restaurants and hospitals in nearby cities telling them about the number of eggs I could furnish them each week, the quality, color, etc. I secured a market with very litle trouble, for such concerns are glad to find a place where they can obtain strictly fresh eggs of uniform color, size and quality. The first year I sold my eggs in this manner I cleared $125 more than if I had sold them on the home market. The only difference in trouble was, I saw to it that every egg I sent out was spotlessly clean. The eggs were taken to the express office instead of the store, and that was about all the difference in handling them. After June 1 I disposed of all my old male birds, so the eggs would be non-fertile, as such a trade demands this kind of eggs. What is the use of feeding old roosters all summer? That is, of course, if you intend to use new cockerels in the flock for another year. Any old male birds that were of especial value were put in a small yard and well cared for.

I followed this method of selling my eggs for several years. All this time I was trying to get a flock of Brown Leghorns. At first I owned one of the larger breeds, but I couldn't get the pullets to lay in fall and winter, so I purchased a pen of five Brown Leghorns and a rooster. From this pen I built my present flock of 500 hens. For a few years it was necessary to keep my Leghorns penned so they would not get mixed with the other breed, but as soon as I could I sold off everything on the place except the Brown Leghorns. I don't like to keep two breeds, for it is too much trouble, and when you can sell all the eggs and fowls raised at a good price, what is the use I haven't had any except the Leghorns now for over six years and find them a strictly business fowl.

Several years ago I became interested in selling eggs for hatching. I read of other folks doing it, and so I concluded to try it, as my flock was of good quality and good layers too. With much misgiving, but great determination I spent several dolars advertisinig eggs for hatching in the small papers in nearby towns and cities. It was interesting. I'll never forget the excitement I felt when the mail came. When an order came for eggs I was very careful in filling it promptly and carefully. I didn't get rich by any means with those small advs. but I was gaining in experience, and made considerable more than from my former method of selling eggs. The next year I advertised in some of the farm papers. The advs. run with the farm papers have proven much better than the same amount spent with papers in the litle towns. The farm papers are much cheaper considering their circulation. Then, no one but farmers or people interested in farms take these papers, and everyone that is interested in farming in any way is more or less interested in chickens. Now after several years of advertising we continue to use the farm papers, for they are the best advertising mediums. Each year I have spent a little more money advertising, and each year the profits have grown proportionally.

It is interesting work. You come to know so many different people throughout the United States, and feel that you have gained many friends. Nearly every mail brings letters from someone interested in chickens or some phase of chicken work, not always my especial breed, oh no, but we "chicken folk" are always willing to help with asked-for advice.

Any farm woman who owns a flock of pure-bred chickens can certainly increase her profit by advertising the egg as we have done. Or any farm woman can in a very few years own a flock of pure-bred chickens as I did, by making a start and working at it every year.

We have found it very convenient to send eggs to any part of the United States since they can be sent by parcel post, which reaches into every nook and post office. You would be surprised at the number of letters we receive saying "Please send my eggs by parcel post or return my money, for I live so very far from express office, and if sent by parcel post they wil lbe delivered at my door with the rest of my mail!"

Shipping Eggs by Parcel Post

We have found it best to advertise the eggs post paid. In this way the prospective customer knows what the eggs will cost delivered to him, and does not worry about what the charges might be and in the end perhaps not order at all. We use baskets to send our hatching eggs in, as they are so conveniently handled and the percentage of breakage is quite small. Parcel post eggs are handled just as carefully as eggs sent by express. They are not put in mail sacks as so many suppose.

Business Shows a Steady Increase

Our flock has grown from year to each year. The houses were paid for many, many times by the chickens before they were built. For 10 years we have been improving our poultry yards. Our poultry is only a part of our farm work, but we try to make it a very profitable part.

Really there is more money in poultry considering what you have invested in it, than any other branch of farming. I started 1916 with 365 Brown Leghorn hens. The cash sales from the flock were $1782,91. Of course there were expenses, the advertising, postage, etc., but I kept accurate record of those, and even charged their feed to them, and still

RAISE EVERY CHICK

More chickens this year than ever before. More for your table, more for market.

That's the demand. You need them to replace high-priced meats. The country needs them for the same purpose.

The opportunity to make money and save money with poultry was never so great as now. But you must make every chick from your high-priced eggs grow, and every ounce of your high-priced feed produce meat.

Certainty of success—of raising every chick that is right to marketable age quickly—is insured when you use the

STANDARD Colony Brooder

It stops the frightful losses so common to the brooder period. Makes three chicks grow where one grew before. Broods 100 to 1000 chicks with equal success, at a cost of less than 6 cents a day. Burns hard or soft coal. Fire lasts 24 hours from one filling. Cuts installation and operating cost to less than half—labor cost to less than a fourth.

Absolutely safe and sanitary. Nothing to catch fire; no corners where chicks may be crushed; no wooden walls or curtains to harbor vermin and dirt. Complete ventilation without drafts. Nothing to it but a smooth, solid cast iron stove, a clean galvanized steel hover, and the regulating apparatus. Nothing to wear out. Positively self-feeding and self-regulating.

It is so good that it has many imitations. But our patents will be protected. Make sure you get the Standard. We are so certain that it is the best brooder ever built, so sure it will satisfy, that we let you

Write Your Own Guarantee

What do you want a brooder to do for you? Write it down. We'll sign it. And if the Standard does not fulfill your guarantee in every particular we will return your money without argument.

The Standard is endorsed by all agricultural colleges and experiment stations. Among more than 30,000 enthusiastic users, big and little, not one failure has ever been reported.

Over 6000 dealers sell it. The one nearest you will be glad to show you the Standard in operation.

Write for the Buckeye Catalog and get the most wonderful testimonials of chick raising success you ever read. A post card request will bring it.

The Buckeye Incubator Company
122 Euclid Ave., Springfield, Ohio
Pacific Coast Branch, Box 122 Oakland, California

Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send FREE to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Address

Mrs. M. Summers
BOX 309 WINDSOR, Ontario

BISHOPRIC AND THE FARMER

BISHOPRIC products mean more than sound, substantial, durable buildings. They mean building material that you can handle yourself at a saving of from 25% to 50% over sheathing, lumber, metal lath, and lath and plaster—and give you a warmer, drier and better building.

BISHOPRIC STUCCO BOARD

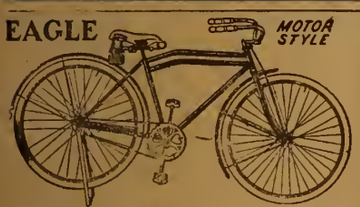
is the cheapest and best background for stucco for outside walls, and for plaster for inside walls.
The thick layer of asphalt mastic prevents dampness; the stucco or plaster is held by the dove-tailed lath, while the sized sulphide fibre board holds the material firmly together, and is a non-conductor of heat and cold.
For interior work, when plaster is not desired

BISHOPRIC STUCCO BOARD

should be used, applied with the lath to the studding and the sized fibre board ready for any class of decoration, exposed.
It is easily and quickly applied without creating muss and dirt, saving lath and plaster, and about 50% of the labor cost.
If you are building or intend to remodel the house or barn, write us for descriptive and illustrated booklets, telling in detail the facts about Bishopric products. 87

BISHOPRIC WALL BOARD CO.
LIMITED
529R Bank Street, Ottawa, Ont.

EAGLE MOTOR STYLE



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showing our full lines of Bicycles for Men and Women, Boys and Girls.

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Tires, Coaster Brakes, Wheels, Inner Tubes, Lamps, Bells, Cyclometers, Saddles, Equipment and Parts of Bicycles. You can buy your supplies from us at wholesale prices.

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27 Notre Dame Street West, Montreal.

THE WINTER TERM
of the
Fredericton Business College
opens on
Monday, January 7, 1918

Pamphlet giving particulars of our courses of study, rates of tuition, etc., will be mailed to any address os application.

W. J. OSBORNE, PRINCIPAL,
Fredericton, N. B.

year, and as it has grown, new houses have been added. Small houses are used for raising the chicks and for especial breeding pens. These houses were formerly occupied by the laying hens, but three years ago we built a long laying house. Only a little money has been spent for equipment had a clear profit of over $1000 left. I also increased my flock to 500 hens. In 1917 total sales amounted to $2.-142.67, feed cost $802.75, advertising $179.23, postage and expressage $110.23, leaving profit of $1050.44.

USE STANDARD POULTRY

Standard poultry, as the phrase is commonly used in America, is poultry bred to the stndards established by the American Poultry Association.

The object of making standards for poultry is the same as the object of making standards of weight, volume or quality for any product or commodity—i. e., to secure uniformity and establish a series of grades as a basis of trading in the articile.

In makinig standards for poultry which apply in the process of production the principal points considered are size, shape and color.

Breed Characters

Size and shape are breed characters and largely determine the practical values of poultry. Many standard breeds are divided into varieties differing in color, but identical in every other respect.

Color is not a primary utility point, but as a sec ndary point often comes in for special consideration. For example, a white variety and a black variety of the same breed are actually identical in table quality, but because black birds do not dress for the market as clean and nice looking as white ones, it often happens that they are not as salable.

When a flock of fowls is kept for egg production only, uniformity in color is much less important than type, yet the more attractive appearance of a flock of birds of the same color justifies selection for color as far as it can be followed without sacrificing any material point.

When a poultrykeeper grows his own stock year after year, he ought by all means use stock of a well established popular standard breed. By so doing and by selecting as breeders only as many of the best specimens of the flock as are needed to produce the chickens reared each year, a poultrykeeper maintains in his flock a hiighly desirable uniformity of excellence in every practical quality; with litle extra care and no extra cost can have a pleasant uniformity in color.

Each Breed Has Its Place

To the novice in poultrykeeping, it often appears that there is no real necessity for so many breeds and varities as have been standardized in America. Further acquaintance with them however, shows that although color differences are in most cases made merely to please the eyes of persons having different preferences for color, the differences in shape and size which make breed character have been developed with a view to adapting each to particular uses or particular conditions.

Leaving out of consideration the breeds kept as novelties, the most of which originated before industrial progress created a large demand for poultry products, all the standard American breeds of fowls have been made and developed on the general principle of practical quality, the foundation of breed character and value.

Classification of Useful Breeds

In harmony with this principal, the common classification of breeds according to their place in the general scheme of poultry production divides them into three principal classes—namely, laying breeds, meat breeds, and general purpose-breeds, that is, breds that are not a ready an persistent egg producers as the laying breeds, and not as meaty and as easy to fatten as the meat breeds, yet combine in one individual fowl very good laying capacity, with very good table quality.

The Leghorn, Minorca, Andalusian, Ancona- and Campiine are well known breeds of the laying class; the Brahma Dorking and Cornish of the meat class; the Plmouth Rock, Wyandotte, R. I. Red and Orpington of the general purpose class.

Characteristics of Egg Breeds

The breeds mentioned as of the laying class, with the exception of the Minorca, are relatively small, very energetic and lively, mature early and are easily kept in good laying condition. The Minorca is of a larger size and modified somewhat in th eother particulars mentioned, yet has more the character of the laying class than of any other.

Characteristics of Meat Beeds

In the meat breeds, there is not the same uniformity of type that is found in the laying breeds. The three mentioned are all quite different. The Brahma is most popular because it is at the smae time the largest and the most rugged in sonstitution. The Dorking excels in quality of meat, but is generally considered somewhat lacking in hardiness. The Cornish is rather hard-meated, but being very short feathered, hits its special place as a large meat-producing fowl in southerly sections where the more heavily feathered Brahma does not stand the summers well.

(Continued from page 330)

Big Egg Yield

Royal Purple Poultry Specific is a great egg producer and poultry conditioner. It makes hens lay in the winter almost as well as they do in summer. This is because our Poultry Specific supplies the missing food elements that fowl need in their winter ration and without which they cannot lay. Royal Purple Poultry Specific tones up the digestive system, and keeps the fowl active and healthy. It should be fed daily in a hot or cold mash.

Royal Purple Poultry Specific

has pleased thousands of farmers and poultrymen. It has enabled them to get winter eggs without trouble. Read the views of the following users:

Fred E. Bond, Kincardine, Ont., writes:
"I have been feeding Royal Purple Poultry Specific to my hens this winter and I find it beats anything I have ever used as an egg producer. They started to lay right away and kept on gaining. I will never feed anything else as long as I can get it."

T. W. Hale, Toronto Annex, writes:
"I have fed your Specific to poultry, and it is a valuable tonic; increases the production of eggs. Would not be without it; keeps them in good health and I recommend it highly. Any person trying it once will not be without it."

If you want more eggs and healthier fowl, feed Royal Purple Poultry Specific. It is sold in large and small packages.
Ask our dealer in your town for it.

Made only by
W. A. Jenkins Mfg. Co., Limited
London, Canada

FREE BOOK
This 80-page book describes the common diseases of poultry and stock. It tells how to build and remodel poultry houses, etc., etc. Send for a copy.

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INTERNATIONAL
POULTRY FOOD TONIC

International Poultry Food Tonic is a highly beneficial preparation containing finely ground roots, spices, herbs, & seeds. It provides just the right tonics to make your hens lay, its use often doubles the production of eggs.

International Poultry Food Tonic by toning up the dormant egg-producing organs will make your hens lay more eggs and further make them capable of standing the strain of such heavy laying.

International Poultry Food Tonic is sold by all dealers in 25c, 50c, & $1.00 packages on a spot cash, money back guarantee. The cost is trifling, will pay for itself many times over. Write to-day for a copy of International Poultry Guide—FREE.

INTERNATIONAL
STOCK FOOD CO., LIMITED
Toronto, - Canada

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

WHEN I WAS A BOY ON THE FARM

The Late Jos. Wing Was One of the Greatest American Writers. This Is One of His Short Stories Written Just Before His Death.

Folks say these are better times than the old ones were, but I guess that they either did ot live in the olden times or they have forgotten a lot. Why, when I was a boy folks did not worry about things as they do now. My mother, who was a little woman and nowadays would be called "delicate" and have to have a "specialist" and like as not a trained nurse, had four boys to look after. She made our little trousers of that awfully good all-wool cloth (the cloth was made within half a mile of us, in a little country mill) and those little trousers wore all winter, I tell you, and maybe for two years. I wonder if that is not one secret of why women are so in a hurry these days, that they use flimsy materials in making goods.

Mother was never in a hurry, and never worried. How she did sing as she worked! And it was work, too, do not doubt that. Father kept a lot of old-fashioned cows that just melted and filled all the pails and then ran over a lot of foam, and mother set the milk in pans, in the cellar in summer and in the pantry in winter, and these she skimmed off the thick, yellow cream. What delicious cream that was. I used to steal it sometimes with a guilty finger, swooping it up from around the edge of the pan where it was thickest and sweetest. So mother made butter, immense solid rolls of yellow butter, and never a hint of butter color to be used those days, either.

And then there was the calves to be fed and the milk to be warmed for them on the kitchen stove. It seems to me that was a little rough for we used to spill it now and then as we took it off, and that must have made more work for mother to clean up, but she never complained.

Mother sang as she worked, and at night when her tired little boys wished a very luxury of going to sleep we would lay our heada in her lap and have her sing again to us. There was the song of "Pharaoh's Daughter." I wonder if any of you remember that song, how—

"Just before it was dark
They opened the ark
And found little Moses lay there."

I would give a milion dollars, if I had it loose, to lay my head in my mother's lap again and hear her sing that as she used to sing it, and to be as care-free as I was then! Well, there were other fine old songs and ballads. I wonder if any of you ever heard of the time "When the wind swept across the wild moor." That was a good creepy song to sing on winter nights when the wind whistled through the key holes. You know it goes this way:

"Oh father, dear father, she cried,
Come down and open the door,
Or the babe in my arms will sicken and die,
As the wild wind sweeps across the wild moor."

Just think! The cruel old heathen never listened at all, but buried his horrid old head in the covers and let the beautiful daughter die there in the storm, on his very doorstep, though I hope the baby did not free·e but was all right in her poor frozen arms next morning. I am not so sure about that.

Mother knew a lot of songs, and was a wonderful woman. Father was like the rest of us—pretty countryfied, and wore great cowhide boots and had calloused hands (nice warm, hands though to grasp our little hands and take us with him over the farm on cold days), and he could not sing, but mother had been a lady in her time and gone to boarding school and had learned to draw wonderful pictures of houses with wide overhanging roofs and bay windows upstairs and willow trees and water wheels and nice rosy boys and girls with curls and nice clean frocks on them. I used to wonder sometimes why she married a big rough man like my father, and yet sometimes when he had his Sunday clothes on he was handsome, and he used to take her then on his knee and she would snuggle down like a little child and her bright eyes would peep out roguishly to us from under his long beard. So I guess she loved him if he was big and rough, only I used to think that mother should have married a poet or an artist to have had her real mate, but no doubt she knew best.

I remember my first Christmas in our new home. What a happy one it was! It was in the good year of 1866 when I was five years old. Father had a mortgage on the farm to pay and mother never dreamed of going to the store for gifts, any way; they must come from her own hands. So she made some of her awfully good sugar cookies and cut them out in all sorts of shapes of little animals and men and boys, and she made me a little yarn ball (you ravelled out old socks wollen socks, and wound the ball, then covered it with bright colored Morocco leather). And I think I had a new knife from father, and I know I had a little book that she had made and bound, all herself, from plain white paper, and on each leaf a picture that she had drawn and a little writing or perhaps it was printed. How she loved to do such things, sitting up by the light of a tallow candle after we were all gone to bed, and working patiently at them. Ah, it was indeed a happy Christmas that year!

But I menant to tell of what women did in those days that they have forgotten to do now. Our old orchard used to load itself with apples then, more than it does now several times over. There was the great Pennock tree, with immense red apples, rich and juicy. There were the black apples and the Toppehockens and the Rambos and the fall pippins. They used to be wagon loads of big yellow apples and father would have me help pick them carefully, then mother would pare them (I used to love to eat her quarters, and she had usually a nice soft one for me), and then she would string them up to dry. I think we had a frame that was set in front of the open fire where they dried. Bushels of dried apples we had every winter, for there were not so many glass jars those days as there are now and no one dreamed of going to the "store" for fruit when his own was gone, so we did not let it waste.

Then she boiled sweet cider and made apple butter. Do you know, I never knew till this very year that there were people too ignorant to know how apple butter is made? Why, I supposed that every good citizen was raised, as I was, on bread and apple butter in the winter time. Well, ,you get good, sweet cider, not made of rotten appels (and I would love to tell you about the cider-making too, and how delicious it is to suck through a straw as it runs from the press, ,anad the yellow jackets up hungry kids! And awfully wholesome for them, that dispute with you the right of sipping it) and you boil that cider a good deal and it must not scorch either.

The best way is to have a brass kettle that holds about 30 gallons and have it outdoors, near the chip pile. Then you pare and core all the day before, and the men folk and sometimes the neighbors help you. You ought to have about ten bushels of apples pared and cored, as near as I can remember. Then early in the morning you start a fire under the kettle and putting the apples in you begin to stir the apple butter wiht a long-handled stirrer shaped like a big hoe, only the hoe part reaches clear to the bottom and scrapes the sauce off so that it wil! not burn or scorch and taste smoky. All day you must stand there and stir, and you ought to wear an old sun bonnet. The real old ladies sometimes smoked short clay pipes. Some way it seems the natural thing to do, but I do not advise the inexperienced young ladies to try it, not all at once anyway! Nor do I advise them to try to make apple butter in the real old-fashioned way!

Women of the olden time would peel a bushel of apples and think no more of it than the modern girls do of peeling a quart, and the ladies of the olden times had less backache and less heartache and less tribulation over making a half barrel of apple butter out by the chip pile than the young housewife has over making h half dozen glasses of jelly. Why is it? Blest if I know. I gues it is because there is now more fear of what Mrs. So-and-So would think if the jelly was spoiled. We live differently; we do not work so hard, but we work in a nerve-destroying way more than our mothers did.

But what was the apple butter for? Why, bless you, it for spreading on bread, and for hungry boys and girls! Licking good it is, thick and purplish or nearly black, pretty strong, having a lot of taste of the orchard boiled down. You can taste a whole summer's delights in a single spoonful of apple butter, and sometimes there is the hint of fall too, the smoke of Indian summer, and you can even tell what sort of chips the fire was made of that cooked the stuff. But how it did fill too. That is how our fathers paid off their mortgages. Half the country was in woods and half the rest was in wet pastures. Crops sold cheap, too, except right after the war, but the women folk never dreamed of asking for a cent of money and all that we had to buy from the store was salt and short sweetening for time of company; long sweetening (or sorghum molasses or maple) was plenty good enough fro us boys, and father took his own wheat and corn to the mill and we ate hundreds of bushels of corn made into mush and Johhn cake.

That little mother of mine raised chickens and turkeys and Shorthorn calves and made her flower garden. Father always attended to the vegetable garden, and she cleaned house mightily once every year and wove

GILLETT'S LYE
HAS NO EQUAL
It not only softens the water but doubles the cleansing power of soap, and makes everything sanitary and wholesome.
REFUSE SUBSTITUTES.
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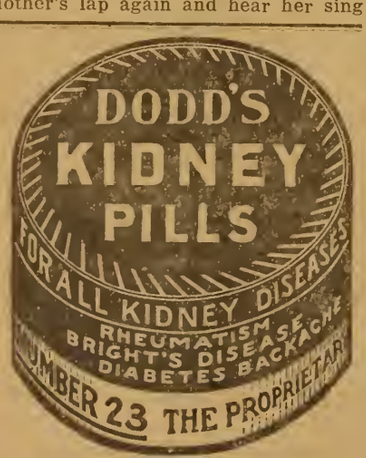

Black as Dirt About the Eyes

Liver Was All Upset and There Was Pain Under the Shoulder-blade—Two Interesting Letters.

So many people suffer from derangements of the liver that we feel sure these two reports, just recently receivied, will prove interesting reading and valuable information to many readers of this paper.

Mrs. F. L. Harris, Keatley P. O., Sask., writes: "I was suffering from liver trouble—had a heavy pain under one shoulder blade all the tiime, and was nearly as black as dirt around the eyes, so I concluded to try some of Dr. Chase's Kidney-Liver Pills. I did so, and before I had taken one 25c. box the pain had left me and I commenced to gain in flesh, and by the time I had taken two boxes I was completely cured and felt like a new person. My trouble was caused by heavy work out-of-doors and, of course, heavy eating and constipation. I would advise anyone suffering from kidney or liver trouble to giive Dr. Chase's Pills a trial."

Mrs. Charles Terry, Tweed, Ont., writes: "Before I was married I was troubled with enlargement of the liver. My liver became so enlarged that you could detect the swellings on either side, and it was only with difficulty that I could get my clothes on. A friend advised me to get Dr. Chase's Kidney-Liver Pills and take them. I commenced this treatment, and used nine boxes, which cured me at that time. Then, about two or three years afterwards I was troubled again with the swelling but only on the right side. I secured some more Kidney-Liver Pills, and took them, which finally cured me. I have not been troubled in this way since. I can cheerfully recommend Dr. Chase's Kidney-Liver Pills to anyone having kidney or liver trouble.

"We have also found Dr. Chase's Linseed and Turpentine excellent for coughs and colds. In fact, any of Dr. Chase's medicines which we have used have been good.

Dr. Chase's Kidney-Liver Pills, one pill a dose, 25c a box, 5 for $1.00, at all dealers, or Edmanson Bates & Co., Limited, Toronto.

Severe Headaches

CAUSED BY

SLUGGISH LIVER.

When the liver becomes sluggish and inactive the bowels become constipated, the tongue becomes coated, the breath bad, the stomach foul and then ensues headaches, heartburn, floating specks before the eyes, water brash, biliousness and all kinds of liver troubles.

Milburn's Laxa-Liver Pills will stimulate the sluggish liver, clean the foul-coated tongue, sweeten the sour stomach, and banish the disagreeable headaches.

Mrs. A. Shublery, Halifax, N.S., writes:—"I take pleasure in writing you concerning the great value I have received by using Milburn's Laxa-Liver Pills for a sluggish liver.

When my liver got bad I would have severe headaches, but after using a couple of vials of your pills, I have not been bothered any more."

Milburn's Laxa-Liver Pills are 25c. a vial at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

husk mates and sewed carpet rags and walked to church, a mile and a half, and sang to her four boys and her one daughter and read good books and the one newspaper and lived with her soul up in th eclouds or the heavens anyhow, and believed in her boys and never was afraid that we would fall out of trees or fall into bad company. And someone who looks after mothers and boys made her faith come true, pretty near.

Yes, they were good old times, and right willing would I be to go back to them, for a time at least, though I might find the copper-toed boots rather cold on my feet, and might think that upper bedroom pretty draughty on zero nights, but after all I sleep now with my window up, or else clear out of doors, so I think I could endure that. But to get back, to see the women folk as happy as they once were, to see them again making apple butter in their back yards, singing as they worked, to smell the mushpot on the stove, to hear the slow bubbles burst from its yellow surface, to see the slow stream of golden sorghum as it poured from the glass syrup pitcher to a pile of yellow corn cakes, to see my little skates hanging against the wall and my cap (mother made it) and my mittens (mother knitted them and has darned them again and again)—how it would warm my blood and make my heart grateful and glad again!

There is a Message in This Lady's Story

SHE TELLS WHAT DODD'S KIDNEY PILLS DO FOR WOMEN

She Was Troubled With Weakness and Her Daughter Had Nervous Trouble. Dodd'sKidney Pills Proved the Remedy They Both Needed.

Hamilton, ,Ont., Mar. 4th. (Special)—The story told by Mrs. H. Dickens, of 70 Tom Street, t,his city, carries a message of hope to every suffering woman in Canada.

"After my baby was born." Mrs. Dickens states, "I used to suffer with my back and had no heart to do my work around the home. But I read about Dodd's Kidney Pills and what hey have done for others, so I thought I would get a box and see what they would do for me.

"I am pleased to say that after taking two boxes I found such great relief I would not be without them in the house.

"My daughter, too, had been very sick on and off for a long time. Her nerves got so bad we were afraid we would see her in the hospital. But I am pleased to say she is better through taking Dodd's Kidney Pills.

"I never thought Dodd's Kidney Pills could have done such good work and I am telling all my friends about them."

Women's troubles, or nearly all of them, come from sick kidneys. The cure for them is the old established remedy for sick kidneys, Dodd's Kidney Pills.

ARE YOU EATING ENOUGH VITAMINES?

Vitamine is defined as one of a class of substances of unknown composition existing in minute quantities in natural foods and necessary to normal nutrition, absence of which from diet results in deficiency diseases such as beriberi, scurvy and rickets.

For a long time it was known that beriberi was associated with too exclusive a ration of polished rice and some of us will remember that in our youth we were taught that scurvy among the sailors was caused from eating too much salt pork, or at least from an unbalanced ration.

We are now speculating as to the possible nutritional disturbance that may result from eating canned goods that have been heated to the point where the vitamines have been destroyed; from eating potatoes and apples that have been peeled, oatmeal., and milk that has been pastruized. Respecting the pasteurization of milk the uestion is an important one and should be further inivestigated, since milk constitutes the most iportant diet in children. Bruce Macallum, of London, conducted a series of experiments and makes the following statement: "The generally approved method of heating the milk 145 degrees F. and holding for 30 minutes, does not esriously affect the vitamine content."

Living, as we do, largely upon artificially prepared foods th esubject is search is replete with posibilities.—Geo. H. Clover, Colorado Agricultural College, Fort Colins, Colorado.

THE TEMPORARY REPAIR OF A SPECTACLE LENS

Those who are so unfortunate as to have to wear glasses know what inconvenience and discomfort are caused by breaking a lens and having to wait for a new one. Matters are helped some if a repair can be effected. This is not always possible but if the break is a simple fracture, the following method produces a good repair:

Soften gum shellac in alcohol and apply it to the edges to be cemented. Press the edges firmly together and hold in positiion for a few minutes. Then lay the lens on a pad of cotton or soft cloth for an hour or two, so that the shellac may harden enough to stand usage. Note that the shellac is not to be dissived in the alcohol —just soften until it can be spread on the edges of the glass.—L. S. Foltz, Colorado Agricultural College.

HOME SOLUTION MAKES PASTEURIZED CREAM WHIP

People who use pasteurized cream often have trouble in getting their cream to whip. This is due to the substance called viscogen, being destroyed by heating. This trouble can aesiliy be remedied by adding a cmall amount of homemade viscogen, which can be prepared as follows:

First, dissolve 2½ parts sugar in 5 parts water.

Second, dissolve 1 part of quicklime in 3 parts watetr.

Mix the two solutions and let stand a few hours. Siphon off, or pour off, the clear liquid, and what is left is an excellent substitute for viscogen, which, with proper care will keep for a long time. Use about a teaspoonful for a pint of cream.—W. F. D.

Endurance!
Aerial warfare is playing a most important role in this world war. Without our Aviators the artillery would be blind and useless.
COWAN'S
COCOA

Those who have to endure intense and nerve racking duties need to be primed up and fortified for the occasion. There must be no clog in the smooth running machinery of the human body. Eyes must be clear, brain quick and body normal. In order to meet these necessities proper care must be given to diet. Food must be consumed that is rich in Carbo-Hydrates, Proteins and Fats. COCOA—when mixed with milk is the ideal food drink to meet these requirements. It is a safe and sensible way to nourish the human body, for all times when quickness, accuracy and endurance are expected and when indecision spells defeat. For the best and surest results be sure you get

COWAN'S COCOA—

"Perfection Brand" Purest and Best

B-41

Croup

"Granny" Chamberlain

"I don't think there is a more anxious time for parents than when their children have croup. Without they are prepared with Chamberlain's Cough Remedy they must wait for the doctor and listen to the choking, metallic cough and watch their little one gasping for breath.

You know the great danger of croup is the formation of a false membrane in the larynx, and until this is expelled relief cannot be obtained, and the spasmodic choking continues. Give Chamberlain's Cough Remedy in frequent doses. It will loosen this membrane and cause the child to expel it by vomiting.

Chamberlain's Cough Remedy

is an absolutely safe and certain remedy for croup, and if given as soon as the child becomes hoarse, or even after the croupy cough appears, it will prevent the attack."

Yours for Health—Granny Chamberlain

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TUBERCULOUS GLANDS

The old name for this condition was "scrofula" and we heard much about "scrofulous children," as if they were a certain type, like "towheads" or brunettes. Now we know that what we called scrofula is one form of tuberculosis, the most common form in children and youth, and probably the least dangerous of any of the tuberculoous infections, this in the sense that it rarely causes death directly, although it pulls down the body etrength until other diseases find easy lodgment in the weakened child.

It is caused by the same germ that causes Pott's disease, consumption and all the other forms of tuberculosis, the tubercle bacillus, but the form being common and seldom fatal, is treated with an indifferenee that is neither wise nor safe. Negroes are more subject to it than whites, but all delicate and run-down children are liable to be victims. "Puny" children, "spindling" children almcst always have little nodules under the jaw or near the ears. The lymph glands in those localities are part of the great lymphatic system which extends over all the body, just as do the nerves and arteries, but concerning which people know very much less. There are groups of glands in various places, like the groin, under the arms and in the neck, and this form of tuberculosis, while it may infect all the glands, appears first in the group in the neck. First the glands swell a little and become like kernels that may be rolled around under the finger. At the beginning they may not be sensitive at all, but if the disease progresses they will become so. They will also grow larger, and they may enlarge until they grow together in one mass. If this happens, the skin may become adherent and latetr may berak open and the pus in the glands discharge. In such a case the skin will be very long in healing and will leave a bad scar. In severe cases there may be general fever, and there is always a great drain on the child's vitality which hinders its development in body and makes it backward in school, besides keeping it in a likely condition to have any other disease that happens around.

Tuberculosis glands are apt to make their first appearance in the late winter or early spring. The reason is evident. vEeryone, young and old alike, is then at the lowest part of the year's well-being, worn down by the rigors of the winter and its indoor life, and often weakened by winter colds and coughs, and all diseases find easier foothold at this season. There are special reasons why some diseases like typhoid fever, for instance, are more prevalent at other seasons, but those reasons are found outside the body.

There are two methods of treatment the expectant and the radical. The expectant method is to try to build up the child's general condition, "expecting" a cure. This treatment calls for outdoor air—by the sea, if circumstances permit—a diet of milk, eggs and other nourishing foods, and freedom from all confining work or study so far as possible. Cod liver oil is a popular adjunct, and I dare say it often helps. This method is slow at the best and it should never be relied on if the glands are increasing in size in spite of it.

The radical method is to take the glands out. The operation is not a serious one, not nearlyas dangerous as to leave the glands in, with the risk that possibly infectoin may be carried to other parts of the body. Naturallly parents dread any kind of a surgical opeartion for their children, but the question is a choice of evils, and a tuberculous gland is much safer outside a child's body than in it.

If the patient is a girl the scar of the wound is always dreaded. Most surgeons consider this esthetic side, and make as small an incision as posible. This is one reason for an early operation, because if the infetion is slight, a short incision will suffice, but if many glands are involved and are matted together, it requires a long cut through which to work. I remember one very bad case in a girl of twelve where both sides were diseased and the cut reached literally from ear to ear, with the exception of a short strip under the chin. Fortunately such cases are rare, and they never need occur if proper care is taken. Another advantage in the operative method is that the clean cut heals in a straight line with only a slight scar, whereas if the skin breaks down of itself and the pus discharges through it, the scar is jagged and much more disfiguring.

After the operation is over and the wound is healed, the child should be given just the same building-up care that was outlined for the expectant treatment. This should be continued until the child is hale and hearty. People sometimes ask if the glands will "return"; of course the glands that are taken out will not come back again, but the glands that are left may become infected the same as the first ones were if the same conditions continue, and it is to guard against this that the after-treatment is given.

Fashions Dept.

How to Order Patterns.

Order by number, giving age or measurement as required, and allowing at least ten days to receive pattern. Also state in which issue pattern appeared. If two numbers appear for the one suit, one for coat, the other for skirt, thirty cents must be sent. Address Fashion Department, "The Maritime Farmer, Sussex, N. B. Be sure to sign your name when ordering patterns. Many forget to do this.

Positively no patterns will be sold under 15 cents each, owing to advance in cost of same.

When ordering, please use this form:—

Send the following pattern to:

Name .....

Post Office.....

County .....

Province .....

Number of Pattern.....

Age (if child or misses' pattern).....

Measurement—Waist .....Bust.....

Date of issue in which pattern appeared. .....

SOME POTATO RECIPES

By Mrs. W. C. Palmer

To obtain the highest food value in potatoes they should be either boiled or baked in their skins. When potatoes are pared before cooking, the least loss iss sustained by putting them directly into boiling water. Do not allow pared potatoes to stand in cold water before boiling, as it has been found that this results in a loss of nutrients.

It takes from 20 to 30 minutes to boil potatoes and about an hour to bake medium sized ones. When the fork passes through the potato easily it is done. The kettle in which the potatoes are cooked should not be used for anything else if one wishes the potatoes to be as wihte as possible.

Plain Boiled Potatoes in the Skin

Selcct potatoe of medium size, wash clean ,by using a vegetable brush rinse in clear water and cook in boiling salted water sufficient to cover. When done, drain and remove cover, shake kettle a few times, and the potatoes are ready to serve. Treat potatoes that ar eto be boiled pared in

Distribution of Seed Grain 1918

Good Seed is scarce—Place your order now with your County Councillor.

The Department of Agriculture has ordered 56,000 bushels of oats and 18,000 bushels of wheat.

Oats will be sold for $1.32 per bushel in bulk car lots, or $1.38 in bags in car lots laid down.

Wheat will be sold for $3.00 per bushel, in bags car lots f.o.b. distributing point for smaller orders.

Local freights will be paid by purchaser.

County Councillors and Agricultural Societies should place car lot orders immediately, stating destination for cars.

Delivery not guaranteed unless orders placed within three weeks, becauseof transportation difficulties.

New Brunswick is expected to bread herself for the duration of the war. Every farmer should grow some wheat.

DEPARTMENT OF AGRICULTURE
FREDERICTON, N. B.

BOY'S RUSSIAN SUIT.

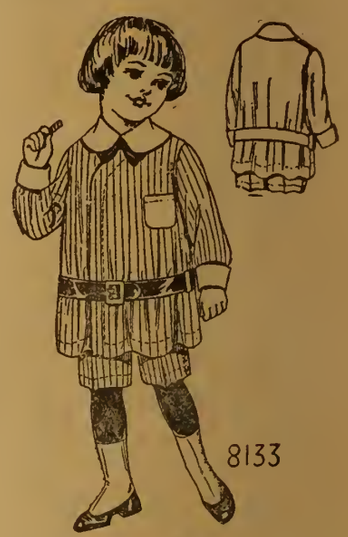
By Anabel Worthington.

The Russian style, so long the favorite with mothers and with Fashion, continues triumphant among the models offered for the small boy. It is, of course, decidedly boyish and when made like the suit shown by this drawing is sure to create interest.

The blouse, cut with smart closing outline, has a neat round collar of the goods or of material in different weave and opposing color; full length sleeves are cuffed to match. At a lowered waistline the fulness is neatly drawn in with a patent leather belt or one of the material in the suit.

A pocket is a little thing, but when a boy of six years is concerned it looms very large, so it will be to advantage to add a pocket to the left side, using self material or contrasting goods, according to the fabric that contributes the collar and cuffs. Any little fellow will feel proud and grown up if straight trousers complete the suit.

In most cases this type of suit is developed in St. Nicholas cloth, gingham, linen or galatea, but one may choose wool mixtures, serge or like weave for a kindergarten suit. There is very little work to copying the design and no worry at all, for the pattern is in pictures for your convenience.



The suit pattern, No. 8,133, cuts in sizes, two, four and six years.

To make in the medium size requires two yards thirty-six inch material; one-quarter yard thirty-two inch contrasting goods.

To obtain the pattern send 10 cents to the office of this publication.

GIRL'S RUSSIAN BLOUSE DRESS.

By Anabel Worthington.

One look at this design makes it clear to us why the fancy of fickle fashion is securely anchored in the Russian blouse. Truly it is a most satisfying style for the growing girl.

In the model illustrated the blouse slips on over the head, is loosely belted at a bit below normal waist line, with pockets in contrasting note clinging to the belt for novelty and to delight the wearer. The sleeve may be in three-quarter length and finished with a very lovely cuff, as pictured, or a long sleeve with its fulness gathered into a wristband cuff may be your choice.

The separate two gore skirt is of different material, but all one may be employed to advantage. Many mothers like a woollen weave for the skirt and linen for the blouse. Others use striped and plain material, as in the illustration, or reverse and make the blouse of striped, trimmed with plain material, and the skirt of plain ground goods. The detail touches are effective, but the lines of this model are so very simple that a girl who has been taught sewing in the schoolroom can copy the design without effort.

The pattern No. 8,153 cuts in sizes 8 to 14 years. To make in size 10 requires 1½ yards of 36 inch goods for the skirt and

trimming of blouse, and 2¼ yards of 36 inch material for the rest of the dress.

To obtain the pattern send to the office of this publication.

the same way, only remove skins in thin parings.

Baked Potatoes

Select potatoes with smooth skins, medium size, scrub well, put to bake on the bottom of a clean, moderately hot oven. When done, pierce in centre to allow the steam to escape. Baked potatoes should be served at once. They become soggy if allowed to stand.

Stuffed Potatoes

Select and wash as for beked potatoes. Bake. When done, take out two at a time. Cut a small opening the size of a teaspoon, scrape out the inside into a mixing bowl, using care not to injure the skins. After all the insides of the potatoes have been removed, mash, add butter, hot sweet milk as for mashed potatoes, salt and pepper. Beat together, put back into skins, brush top of epening with butter, set away until 20 minutes before time to serve. Place in oven and when they puff up and are hot clear through they are ready to serve. Do not allow to stand long before serving.

French Fried

Wash, pare and remove imperfect parts. Have a frying pan ready with hot butter or meat drippings. Slice raw uotatoes very thin in the pan until the proper amount is cut up. Season with salt and pepper; cover. Allow to cook one half to three quarters of an hour on a slow fire, stirring often to prevent burning.

Mashed Potatoes

Select and prepare as for boiling potatoes without skins. When done, drain; shake kettle a few times. Mash fine, add salt and enough heated sweet milk to slightly moisten the potatoes. Then whip with a large spoon until light and creamy white. Serve with a lump of butter in the centre of potatoes.

Scalloped Potatoes

Select and prepare as for boiling, then dice them. Put layer of bread or cracker crumbs in the bottom of a well buttered baking dish, then a layer of diced potatoes, and so on until the dish is as full as wanted, the last layer being of the crumbs rolled in melted butter in order to have them brown nicely. Season each layer of potatoes with salt, pepper and small llumps of butter. Cover with milk and bake one hour. Serve in dish.

It might be a good plan for potato growers when shipping potatoes in sacks to enclose a set of these recipes in each sack. Hotelkeepers and housekeepers could pin these up in the kitchen, and then if new and inexperienced help had to be depended upon thew would be urged to follow one of the recipes.

Fish Cakes

Flake fish from skin and bones with silver fork. To one pound of fish, add three or four potatoes, mashed till light. Season with salt, pepper, etc., little butter and bind with an egg or a stiffly beaten egg white, if desired. Mould into small cakes, dust with flour or roll in fine crumbs, and fry in hot fat until a delicate brown.

Codfish au Gratin

Flake 2 pounds of fresh boiled codfish that has been freed from skin and bone; add 1 cup bread crumbs, juice of 1 onion, 1 tablespoon chopped chives, ½ saltspoon pepper, ½ teaspoon salt, ¼ cup melted butter, 1 egg beaten in a small cup sweet milk, 3 tablespoons grated cheese, ½ cup rich milk. Put in well-buttered shells or baking dish, and bake a delicate brown.

Apple Catsup

Quarter, pare and core twelve sour apples. Put in a saucepan, cover with water and let simmer until soft; nearly all of the water should be evaporated; rub through a sieve add the following to each quart of pulp: One cup of sugth, one teaspoonful of cloves, one teaspoonful of mustard, two teaspoonfuls of cinnamon and one tablespoonful of salt, two cups of vinegar and two grated onions. Bring the catsup up to a boil and let simmer gentl yfor one hour. Bottle, cork and seal.

Apple Preserves

Use thre quarters of a pound of sugar to each pound of apples. Good flavored apples that are not easily broken should be used. Make a rich syrup of sugar and water and add a little ginger root tied in a bag; add a little lemon juice and boil a few apples at a time until transparent. Place in jars or glasses; boil the syrup untli very thick and pour over the apples. Crabapples make delicious preserves; core without paring until clear in a rich syrup, drain and place in jars; fill with the syrup boiled down.

Sweet Pickled Apples

Three cups sugar, 1½ cups cider vinegar, 1 stick ciinnamon, 1 dozen whole cloves, firm sweet apples as needed.

Tie spice in a piece of white cheesecloth; mix sugar and vinegar in a preserving kettle, drop in spice bag, bring to boiling point, and boil 10 minutes. Pare, core, and quarter the apples. Put enough of them into the syrup to be well covered with the liquid, and let them simmer until they are clear and tender if pierced wiht a toothpick. Then take apples up carefully. Place in a scalded fruit jar and pour on enough syrup to cover; when cold, clamp on top.

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Mrs. H. M. Jansen, Pathlow, Sask., writes:—"I feel it my duty to recommend Doan's Kidney Pills to anyone having weak kidneys, as they have been a great help to me. A month ago my kidneys were so bad that I had severe pains in my sides and back, and it was impossible for me to stand straight. I then got so bad I had to go to bed, and was that way for a week. We sent for some Doan's Kidney Pills, and I have taken just about one box, and now I am able to be up and do my own work. I am certainly gratcful for the good they have done me."

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Advertise in the Farmer

WHAT CAUSES JARS TO BREAK

When breakage of jars occurs it is due to such causes as:

1. Overpacking the jars. Corn, pumpkin, peas, lima beans and sweet potatoes swell or expand in processing. Do not fill the jars quite fulll of these products.

2. Placing the cold jars in hot water or vice versa. As soon as the jars are filled with hot syrup or hot water place them immediately in the canner.

3. Having the wire bail of glass top in jars too tight.

4. In a steam canner, having too much water in the canner. The water should not come above the platform.

5. Allowing a cold draft to strike the jars when they are removed from the canner.

6. Having the wire bail to tight, thus breaking the jars when the lever is forced down.

Defective Jars

The following are valuable tests for screw-top jars:

1. Place the top on the jar without the rubber. Turn it down tight. If the thumb nail can be inserted between the top and the glass the top is usually defective.

2. Place the rubber and the cap in position and screw down tightly. Pull the rubber from its position. Release it quickly. If the rubber returns to its position between the top and the jar the top is defective.

BEWARE OF UNDER-COOKED PORK

Impaired health and even death has not infrequently been caused by eating raw or partly cooked pork which was infected by certain parasitees which inhabit in their cystic form the muscular tissues of hogs.

One of these, the cause of "measly pork" is the cystic or early stage of the armed tapeworm of man and is to be feared for this reason. Should infested meat in which the cysts have not been killed. be taken into the digestive tract the parasite undergoes complete development, and the dreaded tapeworm is the result.

The other parasite. the cause of the condition known as trichinosis is probably the most dangerous of the two. It is a small spiral-like organism curled up in the form of a cyst and affects the muscles of hog and man, causing a severe inflammation and frequently causing death in man. Persons become affected by taking the live cysts into the digestive tract through the medium of improperly cooked pork and the parasites here develop and reproduce. the young working their way through the walls of the intesines and finally coming to rest in the muscles of the head, loins, tongue, diaphragm and hams.

When hogs are killed on the farm or in towns where no system of meat inspection is in force, care should be taken to cook pork thoroughly before eating. Heat is very effective in killing these parasites.—Wm. H. Feldman, Colorado Agricultural College.

RESTORE COLOR TO STRAW HATS

Editress Household Dept.

Please publish in your next issue how to clean a clear white straw hat that has got stained with rain and oblige

Hastings Co. J. W. P.

Note—The other subscriber who asked for recipe for cleaning white straw hat wil find desired information below:

Ans.—Any of following methods will whiten hat; cannot guarantee them to remain white. however. as the sun will tarnish them again. Sponge them with a solution of 1 part of citric acid to 20 parts water; then rinse and dry; or put a small quantity of oxalic acid in a clean pan, and pour on a little scalding water ; with this solution sponge the hat; salts of lemon moistened are also good for whitening hats and can be procured at any drug store for 10c a box. Chip and straw goods are often cleaned in the following way: put small quantity of oxalic acid in clean vessel and pour on it sufficient scalding water to cover the hat; put the hat in this solution and let it remain in it for about 5 minutes; keep it covered by holdig it down with a clean stick. Dry before a fire. The writer has no experience in this latter method. but it could be tested on some discarded hat. The salts of lemon though are reliable and also the citric acid.

BUTTER ?

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2, 5, 10, 20 lb. tins also 3 lb.
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THE CARPET MOTH

The carpet moth is the great enemy to be fought and defeated. There are several efficacious remedies, some of which are here given. One is to steep ¼ lb. of cayenne pepper in one gallon of water, then adding two drachms of strychnine powder. Strain and pour this into a shallow vessel, such as a large tinned-iron milk pan. Roll the carpet up and set each end, alternately, in this mixture for ten minutes, or long enough to ensure the saturation of its edges for about an inch. Do this after beating the carpet. The ends should be likewise treated. Be sure the carpet is dry before tacking the fingers while tacking. When done with the liquid, throw where it cannot possibly harm anybody, or bottle and label for future use, marking it "Carpet Moth Poison." This preparation will not stain the carpet nor corrode metals in contact with the carpet.

Another mixture consists of 1 lb. of quassia chips, ¼ lb. of cayenne pepper steeped in two gallons of water, strained and used as above.

When the carpet to be treated is not to be taken up spray ends, edges, margins, and corners with an atomiser. Perhaps two or three applications might be better than one with the atomiser.

The carpet moth loves the bindings and margins of a carpet. Ingrains or three-plys may be treated successfully while down by wringing a cloth out of hot water, laying it over the bindings and edges and ironing it with a hot iron. This will destroy both moths and eggs. This method is not effectual with Wiltons, Moquettes, or other heavy carpets, as the heat will not sufficiently penetrate them, besides which, ironing injures the pile of velvet; still, the backs can be drawn occasionally, and the carpet laid over on its edges—one side at a time—and steamed on the wrong side. Then wipe the floor under the carpet, as far as the arm can reach, with hot cayenne tea. Also wipe the edge and bindings of carpet with the hot rag, rubbing hard before renailing. Some recom-

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REGAL FLOUR
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mend springling salt around the sides of the room before nailing down the carpet, but this seems wrong, because the salt will surely attract too much moisture.

It is a good plan, where the moths are unusually bad, to saturate the floor with benzine, or preferably, we think, with spirits of turpentine, which is not so inflammable or volatile, and then lay newspapers down under the carpet. This prevents an attack from the under side. It is important to remember that the moth always abhors the light, which is death to the eggs and larvae, and is really the best thing with which to circumvent them.

Corrosive sublimate and alcohol, in the proportions of sixty grains of the former to a pint of the latter, is useful for treating the edges and seams of the carpet where the pest is bad, but the poison is so deadly that great caution is required in its use, especially where there are babies.

The moths deposit their eggs in the early spring. This, therefore, is the season to put away furs and woollen goods for the summer. It is not the moth, but the larvae, that does the harm. Thoroughly beat the goods with a rattan and air them for several hours, in the sunlight if possible. Furs should be carefully combed. Wrap up in newspapers perfectly tight. If this work is done properly there will be no need for airtight chest or cedar chest. Moths do not have any fear of cedar or moth balls, but they will not go through paper or cotton textiles. Indeed, a cotton bag or other wrapping is just as good as paper. Once a month take out the goods and examine them in the sunlight, and give them a good beating. When the moths are not so bad, as in some seasons and locations, this monthly inspection may not be necessary, but this is really the fur dealers' secret of preserving his stock. Camphor is bad for furs, as it impairs their beauty by turning them light. Camphor may be sprinkled among the woollens, but secure wrapping in paper or cotton is good enough. The above method may be used to preserve feathers also.

THE CARE OF CANARIES

A bath is required three times a week.

The birds should be fed at a certain hour each morning.

The room should never be overheated.

Place the cage so that no draught of air can strike the bird.

When birds are moulting, keep them warm and avoid all draughts night and day.

Give nothing to healthy birds but rape, hemp, canary seed, water, cuttle-fish, bone, and gravel paper or sand on the floor of the cage.

If tempted to feed, no harm can be done by giving some summer rape seed, a little hard-boiled egg mixed with some fine biscuit crumbs or some crisp lettuce once or twice a week.

USES OF SALT

Salt in the oven under baking tins will prevent their scorching on the bottom.

Salt puts out fire in the chimney.

Salt and vinegar will remove stains from discoloured teacups.

Salt and soda are excellent as a remedy for bee stings.

Salt thrown on soot which has fallen on the carpet will prevent stain.

EVERY WOMAN

Every woman should learn to rest if she wishes to preserve he good looks. Should she lead a busy life, she must acquire the habit of availing herself of every few spare moments for this purpose.

Hang the arms loosely at the sides and then begin to move them slowly backwards and forwards from side to side. Then open the fingers wide and shake the hands loosely from wrists, and after this practice the same exercise with the legs and feet.

One beauty expert considers that too many hot baths tend to destroy beauty and advocates a tepid bath every day. Exercise also can be indulged in to the point of fatigue, and taken in excess does more harm than good.

BRIGHT OILCLOTH

Try wiping your oilcloth with a flannel cloth wrung from clear, warm water and see how much brighter it is than when any old mop cloth is used and water in which soap or ammonia abounds. If skimmed milk is plentiful it is still better than clear water.

Linseed oil is a spendid oilcloth preservative, but it must not be used too liberally. It should be warmed until it will run freely. Use a flannel cloth, moistened, to spread it very sparingly over the surface. If the least thickness of oil is left on the oilcloth it will collect dust constantly and become a nuisance rather than a benefit. Simply rub the oily flannel over the oilcloth until it shines but leaves no trace of the oil itself.

CLEANING OILCLOTH

A dingy oilcloth may be brightened by washing it with clear water with a little borax dissolved in it; wipe over then with a flannel cloth that you have dipped into milk. Wring the cloth dry as possible.

Fruit stains on linen should be smeared with glycerine and left for about an hour before putting into the wash.

Persons but little accustomed to drink water are liable to have the waste products formed faster than they are removed. Five to six glasses of water a day should be the rule, if you desire good health.

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Send for the PATHÉ CATALOGUE. It contains scientific explanation of exclusive Pathé methods of recording and reproducing sound, together with interesting chats on Period Furniture. Will be mailed free upon request.

THE PATHÉ FRERES PHONOGRAPH COMPANY OF CANADA, LIMITED

TORONTO :: CANADA

2

USE STANDARD POULTRY

(Continued from page 323)

Characteristice of the General-purpose Breeds

Among the popular breeds of the general purpose class, there are also differences in type, adapting breeds to different uses. The Plymouth Rock is generally regarded as the type meeting the widest range of requirequirements in the general-purpose class.

The Wyandotte is a little smaller and earlier maturing, but still very well mated and easy to fatten.

The R. I. Red has nearly the same standards of weight as the Wyandotte, but is a more active bird, not putting on fat so readily; consequently, it approaches the laying type and is popular with those who want eggs and meat, but want eggs most.

The Orpington is at the other extreme in the general-purpose class, being a heavier, meatier fowl than the Plymouth Rock.

A Breed for Everyone and Every Purpose

Such a list of breeds affords so wide a range of choice, that poultrykeepers can always select a standard breed and better adapted to their locality and their purpose than any nostandard stock thcy can procure and have the further advantage of reproducing true to type.

MARKETS INTELLIGENCE DIVISION—LIVE STOCK

(Toronto Union Stock Yards)

Approximately five thousand cattle were on sale during the week, two thousand being offered on the Monday market, eight hundred on Tuesday, sixteen hundred on Wednesday and the balance on Thursday. With a liberal demand prevailing, prices advanced on Monday morning in a very active market, all cattle ruing from 25 to 40 cents per hundred above the closing prices of the previous week. Demand continued strong throughout the week, and on Wednesday, choice cattle were selling a shade above Monday's prices, while the market closed on Thursday with cattle in continued active demand. While there are a number of those choice cattle being marketed there is still quite a number of unfinishe d cattle coming forward. Very few heavy cattle were on sale ,thre being only a few lots offered that weighed over twelve hundred pounds. / Of the best quality animals over that weight, ten head sold on Monday at $12.75 per hundred, another draft of ten realized $12.25, while a straight load was weighed up at $12.00. On Wednesday $12.00 per hundred was about the top for this grade, the quality being scarcely as good on that date. For steers of ten hundred to twelve hundred pounds, $11.90 was the highest figure on Monday, being paid for a straight load weighing well over eleven hundred pounds. nIaddition between three and four hundred steers within these weights sold from $11.35 to $11.85, fifteen head of eleven hundred pounds bringing the latter price, while thirty three head sold at $11.75, and twenty six at $11.70. On Tuesday two head of eleven hundred and thirty five pounds sold at $11.25, and on Wednesday and Thursday quite a number of sales were made from $11.50 to $12.00. Of the steers and heifers under ten hundred pounds a pair of choice yearlings sold on Monday at $14.25, while on Wednesday eleven head of nine hundred and eighty pounds each realized $12.00; the top price on Monday for a straight load was $11.50, while on Wednesday thirty head sold at $11.75. Close to five hunderd head were weighed up on Monday at prices ranging from $10.75 to $11.50, most of them bringing from $11.00 to $11.25. On Wednesday and Thursday a number of loads sold from $11.25 to $11.75 per hundred. Cows and bulle were in active demand in sympathy with the demand for other grades of cattle, most of those of choice quality selling from $10.00 to $10.50, although a number of choice cows sold during the week at $11.00. Good cows sold from $9.00 to $9.75, medium from $7.75 to $8.75 and common from $6.50 to 79.50. A few extra choice bulls of fourteen hundred to six teehnundred pounds reached $11 during the week, but most of the choice ones sold from $10.00 to $10.75, medium from $9.00 to $9.75, and common bologna from $7..75 to $8.75. Little trading was done in stockers and feeders and only a few loads were shipped to country points. Calves were in active demand, choice veal reaching $17.00, while the majority of the best calves brought from $15.00 to $16.50 and common from $9.00 to $12.00.

Sheep receipts were light amounting to about five hundred head for the week. The trading in this department was a little more active than that of the p revious week. A few choice iambs sold at $19.00 and most of the best lambs offered sold from $18.00 to $18.75, light sheep from $13.00 to $14.50, heavy sheep from $11.00 to $13.00, and culls from $7.00 to $10.00.

Hog recepits totalled about ten thousand head, two thousand of which were consigned direct to a local abattoir; in addition several hundred were billed through. Select hogs sold on Monday and Tuesday at $19.00 per hundred, fed and watetred. On Wednesday and Thursday a number of sales were made at $19.10, the market closing firm under an active demand on the latter day.

Of the disposition from the Yards for the week ending February 14th, Candaian packing houses bought 352 calves, 75 bulls, 20 heavy steers, 2,245 butcher cattle, 7.639 hogs, and 663 sheep and lambs. Local butchers purchased 221 calves, 310 butcher cattle, 63 hogs and 60 sheep and lambs. Canadian shipments were made up of 58 calves, 93 milch cows, 20 butcher cattle, 186 stockers and 89 feeders. There were no shipments made to United States points during the week.

The total receipts from January 1st to February 14th inclusive were 27,317 cattle, 2,915 calves, 47.494 hogs, and 7,802 sheep; compared to 33,036 cattle, 34.357 calves, 64,394 hogs and 8.470 sheep received during the corresponding ped.od of 1917.

Montreal

The total receipts of cattle at the Montreal yards were twelve hundred head compared to nine hundred the previous week and fourteen hundred and fifty two weeks ago. A larger percentage of grain fed stock than any time during the last six months was on hand while the remainder of the stock consisted largely of fair to good quality heifers and steers weighing from nine hundred to eleven hundred and fifty pounds. These classes of stock met with the requirements of the trade and quick sales were made throughout at strong prices and in some instances at advances of from 25 to 50 cents per hundred. One steer weighing ten hundred and fifty pounds sold at $12.25 per hundred, this price being obtainable on account of the high dressing quality, the carcass dressing five hundred and ninety pounds or 56.2 per cent. of the live weight. Thirty head averaging nine hundred and eighty pounds, made up of a few steers weighing up to twelve hundred pounds and the remainder of light steers and heifers of various weights, sold at $11.75 per hundred. All were of good finish and high dressing percentage. Thirty five steers weighing from ten hundred and fifty to eleven hundred and fifty pounds sold from $11.50 to $11.75, while ten heifers weighing around nine hundred pounds sold at $10.50. Receipts of bulls were light and of a very wide range of quality.

Prices were firm at a wide spread,

The "Guardian" of Your Cream Profits

It is not a bell; nor a speedometer; nor muscle—it's the *suction-feed principle* of the Sharples Separator. Other separators do not have this basic advantage—that is why all sorts of make-shifts are adopted. These merely *remind* you that cream is being wasted—they don't *remedy* it. To get maximum cream profits you must *skim clean at any speed*—and there's *only one way* to do it—use a

SHARPLES SUCTION-FEED CREAM SEPARATOR

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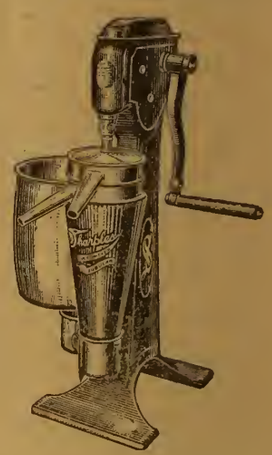

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Sharples Milkers—used on half a million cows daily

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sales being made from $7.50 to $10.50. the latter price being realized on eleven head shipped in from the Union Stock Yards, Toronto, Ontario. Very few choice cows were on hand. the majority of cows ogered being of fair to good grading and selling from $8.50 to $9.50 per hundred. choice animals sold from $9.75 to $10.50. Canner cows sold at $6.00 per hundred, being 50 cents higher in price than at the close of the previous week, while cutters also advanced and sold up to $7.00. About nine hundred veal calves all of dairy breeding. were ogered. Sales were quickly made at from $13.50 to $16.00 for those of good quality, $12.00 per hundred for heavy veal and $10.00 for those in thin flesh.

Sheep and lamb were few in number totalling only two hundred and six head on the two markets. Sheep sold at $13.00 and lambs aruond $16.50. Choice hot-house lambs, which are in light demand sold at $12.00 each during the week.

The run of hogs totalled over three thousand head compared to fifteen hundred last week. Despite the increase in receipts and the indifferent quality, the market was exceptionally strong, the majority of the run selling at $19.50 for selects, fed and watered. This price was o ncontracts made the previous week. and $19.75 was being offered at the close. The average weight of the hogs sold was one hundred and fifty pounds.

Pt St. Charles

Of the disposition from the Yards for the week ending February 14th. Candaian packing houses and local butchers bought 257 valces, 71 canners and cutters, 29 bulls. 255 butcher cattle, 603 hogs and 112 sheep and lambs. Canadian shipments were made up of 47 milch cows. There were no shipments made to United States points during the week.

The total receipts from January 1at to February 14th inclusive were 4,254 cattle. 1,249 calves, 6.909 hogs and 4.706 sheep, compared to 6.029 cattle, sheep, received during the corresponding period of 1917.

East End

Of the disposition from the Yards for the week ending February 14th. Canadian packing houses and local butchers purchased 163 calves, 397 butcher cattle. 670 hogs, and 34 sheep and lambs. There were no Canadian shipments or shipments to United States ponits during the week.

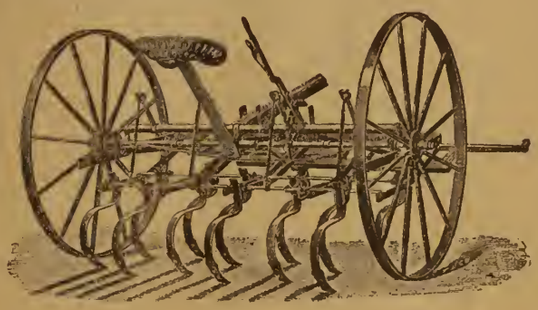
The total receipts from January 1st to February 14th inclusive were 5.093 cattle, 1.160 calves, 5,118 hogs and 4,373 sheep. compared to 6,920 cattle, 1.801 calves. 7,547 hogs and 5,413 sheep. received during the corresponding period of 1917.

CHARLOTTETOWN MARKET

Beef—Carcass, 12 to 16 cents; select 10 to 24 cents.
Veal—None.
Hogs—Selects, 21½ cents, organs attached.
Lamb—None.
Mutton— 15 cents.
Beef Hides—12 cents.
Sheep Skins—$3.00 to $4.00.
Calf Skins—None.
Potatoes— 60 to 75 cents per bushel.
Oatts—90 to 95 cents.
Cornmeal—None.
Bran—$44.00 per ton.
Oatmeal—$6.00 per sack.
Middlings No. 1—$50.00.
Oil Cake—$70.00 per ton.
Buckwheat—None.
Ontaria Flour—$12.00 to $12.50.
Manitoba Flour—$12.75 to $13.00.
Chickens—None.
Turkeys—None.
Geese—None.
Butter. Creamery—46 to 50 cents.
Butter, Dairy—40 to 44 cents.
Cheese—23 cents for whole cheese, 23½ cents for twin cheese.
Hay, Loose—85 to 90 cents per 100 pounds.
Straw, loose—50 to 65 cents per 100 pounds.
Apples—$2.50 to $5.50 per barrel.
Eggs—45 to 50 cents per dozen.

"Champion" Spring Tooth Cultivator

The hardest work you've got is what we ask for the Frost & Wood Champion Cultivator. It's got the design and the strength to do your cultivating just how and when you want it done.



Quick but Thorough Cultivation

You must have it for your plowed land to make your crops a success. It's a pleasure to use the Champion—it gets sure results.

The Frost & Wood 'Champion' Spring Tooth Cultivator

Helps you get a splendid seed bed with the least possible labor. Each spring tooth section works independently of the rest (so that uneven land is thoroughly cultivated) but all the sections are controlled by one easily-worked pressure lever. The frame is of heavy steel, the helper springs and teeth are extra fine-tempered spring steel. You can easily make it into a Broadcast seeder, too' with grain and grass seed boxes, and get positive feed and splendid results.

For cultivating, we can supply both 2-inch and 7 inch points—the 7 inch make splendid thistle cutters. It's an immensely strong, light-draft implement that LASTS.

Drop in at the nearest Frost & Wood Agency (or write our nearest Branch for catalogue) and see the full F. & W. line of Cultivators: "Climax" spring tooth or stiff tooth; cultivators for row crops, corn, etc., etc.

THE FROST & WOOD COMPANY, Limited

Truro ST. JOHN Charlottetown

PURITY FLOUR

(GOVERNMENT STANDARD)

IS A PURE WHOLESOME FLOUR

The same careful milling methods, the same high standard of wheat selection that have won for Purity Flour such a high place in public favor, will be used to produce in

PURITY FLOUR

(GOVERNMENT STANDARD)

the best flour care and science can produce in accordance with the new milling regulations.

IMPORTANT

The recipes contained in the Purity Flour Cook Book are recommended for successful baking of the new Purity Flour (Government Standard). With the aid of this valuable collection of tried and tested recipes you will have no difficulty in producing nutritious and palatable bread, cakes and pastry.

Western Canada Flour Mills Co., Limited

Head Office: Toronto

Winnipeg, Calgary, Brandon, Edmonton, Vancouver, New Westminster. Victoria, Nanaimo, Prince Rupert, Nelson, Rossland, Goderich, Ottawa, Montreal, and St. John, N.B.

EQUIP BARNS WITH AIRY BOX STALLS, ETC.

(Continued from page 321)

high above head should be discarded from all stalls. It is the unnatural way for horses to feed. **Nature intended them to feed with head held low down, and this is the natural position to encourage the flow of saliva.** Also there is an added danger to the eyesight from feeding from a high rack, through dust, grass seeds and chaff entering the eyes.

To make a substantial strong and healthy box stall, it will be better to enclose the space intended for the stall with a low cement wall eight inches to one foot above the floor. Set some three-eights inch bolts in the cement while it is wet, allowing their threaded ends to protrude about two and a half inches above the cement. To these bolt some two by four studdings, and on this erect the division partitions. The boarding of the partition should be close for 4 to 5 feet, and above that should be left with the openings between the boards to allow free circulation of the air.

The floor should be made of cement, rough finished on the surface with a slope of two to three inches from manger to rear to keep it dry.

With the common earth floor, a great deal of the manure is lost by seepage, and the surface of the floor is difficult to keep smooth and clean. If heavy horses are kept on it, a great deal of work in the way of repairs will be needed to keep it even in passable condition. A plank floor has the same fault where heavy horses are kept, necessitating constant repair. They also are unsanitary, absorbing a great amount of the urine and a tainted air is the result. Whatever the plan of construction, strength and comfort combined with provision for light and ventilation should be given careful consideration.&O. V. J.

FUEL VALUE OF WOOD AND COAL

Two pounds of seasoned wood has a fuel value equal to one pound of coal. Of course, different kinds of wood have different fuel values, but in a general way the greater the dry weight of a nonresinous wood the more heat it will give out. Such woods as hickory, oak, birch, hard maple and ash have a comparatively high fuel value, one cord of four-foot wood weighing about 4,000 pounds. A cord of such wood is required to equal one ton of coal.

It is a well-known fact that the value of wood for fuel purposes depends to some extent upon the amount of moisture present. When it is green part of the heat which it is capable of yielding is taken up in evaporating the water and, therefore, the more water the wood contains the more heat is lost.

Those who are in a position to substitute wood for coal should by all means use the former. It must be remembered that in burning wood in an ordinary furnace the draft will be too great and it has been suggested that part of the grate be covered with sheet iron or firebrick in order to reduce the draft. If this is not done the wood will be consumed too fast so that heat is wasted and, in addition, there is actual danger of damaging the firebox of the furnace.

In order of their fuel value hickory must be given first place. It burns evenly and holds the heat. The oaks come next, followed by beech, birch and maple. Those who live in localities where timber is relatively plentiful will possibly get better results by substituting wood for at least a part of the coal. Where a furnace is operated it frequently happens that a fire must hold for a considerable time and in that case coal can be used to great advantage. Furthermore, the covering of the grate referred to above so as to prevent the too rapid combustion of wood can be accomplished by the use of some coal. Where soft coal is burned a large amount of ash is present and that means that there will be a sufficient covering on the grate to reduce the draft to the proper point for a wood fire.

IT PAYS TO TOP-DRESS MEADOWS

Spring top-dressing of grass land increases the tillering or number of stalks. In a Massachusetts field test where part of a field seeded down two years before was top-dressed with a high-grade fertilizer, the first cutting was seven times greater than where no fertilizer was used.

There were 1720 stalks to a square yard where the fertilizer was used, and but 508 stalks on the same area where it was not used; 5445 pounds of grass roots to the acre in the upper three feet and only 4084 pounds where no top-dressing was used. The gain in organic matter in the soil in the single season through the use of fertilizer was 1361 pounds, or 25%.

The additional vegetable matter in the roots is of great value in improving the subsequent tilth of the soil. By top-dressing, a good stand of timothy is usually retained, so that good crops can be secured in the future, whereas when top-dressing is omitted fields soon run out and other inferior grasses take the place of the timothy.

Wood ashes are a rich source of potash. It will pay, therefore, to burn the brush and trimmings from the orchard or woodland, and carefully save the ashes for fertilizer. Make the brush pile on a piece of bare, smooth land. As soon as the ashes are cool, scrape them together and store in bags or barrels.

KEEP COWS CLEAN

During the winter season when cows are housed much of the time it is especially difficult to keep them clean. The only practical way is to prevent them as far as possible from becoming dirty. The practical way to do this, suggests Percy Werner, of the University of Missouri College of Agriculture, is to use the modern stall. This stall consists of (1) a platform of proper length (54 inches for Jerseys and 60 inches for Holsteins, (2) a stanchion (preferably a swinging stanchion) which will prevent forward and backward movement; (3) a gutter in the rear of the cow at least 9 inches deep and 16 inches wide to contain the droppings.

When the cow is tied in such a stall most of the droppings fall into the gutter, the platform remains reasonably clean so that the animal does not become coated with manure every time she lies down. The manure should be removed at least twice a day and plenty of bedding should be used on the platform. If visible dirt is present in the region of the udder and flanks at milking time, it should be removed by grooming. A covered milking pail, which can be purchased at any dairy supply house, will keep from 60 to 70 per cent of the dirt out which otherwise falls into the milk from the cow during milking.

AIDING NATURE IN THE HEALING PROCESS

The onl ything that can heal a wound is the healing power contained in the tissues. All man can do is to aid in providing the conditions that will aid the healing process. In the early stages of a wound even the flushing with antiseptic solutions can not equal the efficiency of the tissues' own action. In a day or so when the tissues have adjusted themselves to the changed conditions, the use of mild antiseptic fluids is of great value to the control of infection, but in the beginning their use should be confined to thorough cleansing of the parts adjacent to the wound proper. Cleanliness is the most important factor in the management of a wound and its

PEERLESS PERFECTION

No matter how fast it comes, the most unruly animal can't break through a *Peerless Perfection Farm Fence*—it springs back into shape.

Made of heavy Open Hearth steel galvanized wire with all the impurities taken out and all the strength and toughness left in. Every wire is crimped making the fence into one continuous spring. Top and bottom wires are extra heavy. Will not sag. Requires less posts than ordinary fence. Absolutely guaranteed.

Don't buy a rod of fencing until you get our illustrated Catalog. Describes our big line of farm, poultry and ornamental fencing. Also Peerless farm gates.

Agencies almost everywhere. Agents wanted in all unassigned territory.

The Banwell-Hoxie Wire Fence Company, Ltd.,
Winnipeg, Man. Hamilton, Ont.

PEERLESS THE ALL AROUND FENCE

No Matter
WHAT YOU REQUIRE IN
HEAVY AND LIGHT
HARDWARE
BUILDERS', MILL,
MACHINISTS', PLUMBING,
AUTOMOBILE and
MOTOR BOAT SUPPLIES
PUMPS, BRASS and IRON GOODS
FOR STEAM AND WATER
We Have It
CUTLERY A SPECIALTY

MAIL ORDERS GIVEN PROMPT ATTENTION

T. McAVITY & SONS, Ltd.
ST. JOHN - New Brunswick

surroundings should be included in the process. It is usually not best to bandage a wound. When uncovered it will dry out. The germs that make trouble in a wound need moisture. In some cases bandaging is necessary. If flies bother the wound, dust on a powder made of 1 part iodoform and 4 parts boracic acid. A pepper or spice box is handy for applying it. The wound should have drainage so that any pus or moisture can run out or it may give rise to infection that will spread to other parts of the body. It it sometimes necessary to make an extra opening at the lower part of the wound.&N. D. Agr. College.

HANDLING THE FLOCKS DURING LAMBING PERIOD

(Continued from page 309)

Acute indigestion sometimes seizes young lambs. It is marked gy great distress and frothing at the mouth. Castor oil (a tablespoonful) is a good remedy

For sore eyes put a drop or two of a 16-per cent. solution of argyrol in the eyes once each day. This should be done with an ordinary medicine dropper.

Navel ill should be avoided by dipping the navel cord in a cup of the tincture of iodine soon after the lamb is born.

For scabs or Poc-like sores on the lips and nose, apply a fairly strong solution of sheep dip after the sores have been rubbed open.

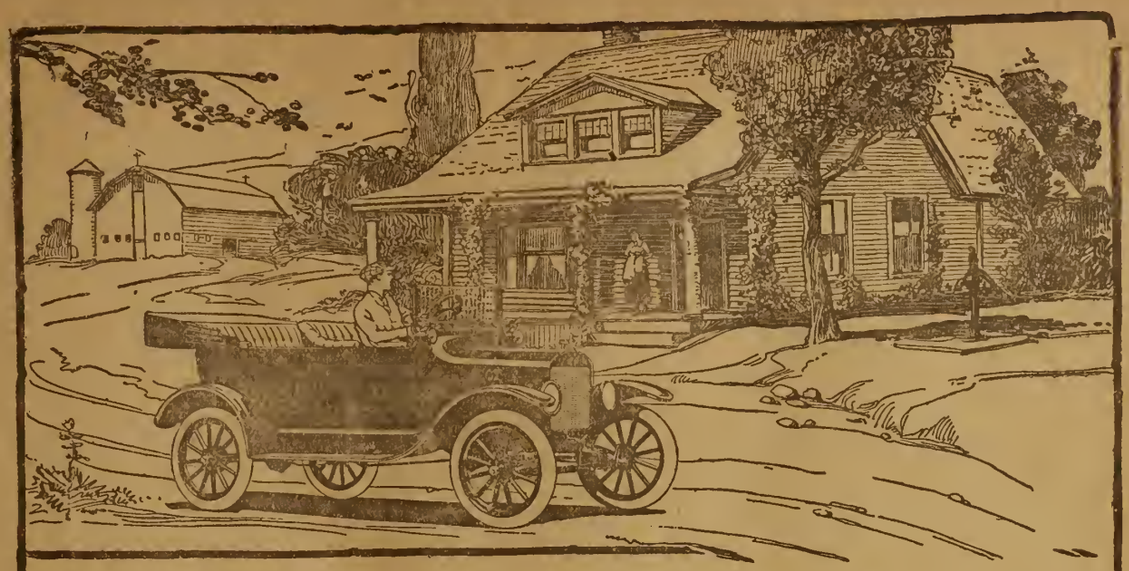
THE DRY COW

The dry cow usually receives but little attention; she comes to the calving in a thin condition. The thin cow at calving is in poor condition to make milk profitably and cannot produce the rugged healthy calf fitted to withstand the many calf ailments. Allow the cow four to ten weeks before freshening. A pound of meal a day during this dry period is worth as much as two or three pounds of meal per day fed after she has freshened. Feed bran and ground oats, plus one part ground oil cake make an excellent grain mixture. The oil meal on account of its cost may be left out and bran and oats, only fed. To the thin cow feed 4 to 7 pounds daily; if the cow is in good flesh, give 1 to 3 pounds daily of the above-mentioned grain mixture. If the cow is fat withhold the grain, but on the other hand do not sacrifice flesh or lose a thrifty condition. A thin cow is very likely to be a light milk producer after freshening. Much of the milk produced in the early lactation stages results from the feed the cow received when dry.

NOVA SCOTIA PROVINCIAL SEED FAIR—1918.

In spite of the unfavorable seed conditions an excellent show was held at the Agricultural College during the winter short course in January. It would have been larger if the weather conditions had not held up traffic from the eastern counties. Antigonish was well represented by good wheat and oats, but the men in Inverness did not get a chance to ship their grain. Most of the potato exhibits came from Colchester and Cumberland. The southern counties were well represented by the smaller grains and seeds. The show of beans was the most striking thing at the fair; there were over thirty exhibits from all over the province.

Many farmers were on hand to buy seed and several exhibits were sold at the close of the fair. It was not possible to buy in quantities as most of the growers were all sold out, while others were holding their seed until prices became settled. However, all who attended were impressed with the quality of the seed present and fully realized the ability of the Nova Scotia farmers to compete with professional seedsmen in supplying our own needs.



"I'm Off to Town, Is There Anything More You Want?"

YOUR son or daughter will be able to handle your shopping in town,—to take your produce to market, or to invite "hands" to the threshing or silo-filling, if you own a Ford. Furthermore they always will be glad to make the trips.

In doing these errands they take a man's place. They save your time—and that of a horse. This time saving means money to you, and again, a Ford, it has been estimated, costs less than two cents a mile to drive, or two-fifths of a cent a mile per passenger. The Ford is, therefore, much cheaper than a horse to drive. It is safer. It is more enjoyable. It requires less attention. It will soon pay for itself. The Ford is the farmer's utility car.

Ford

THE UNIVERSAL CAR

Runabout - - -	$575
Touring - - -	$595
Coupe - - -	$770
Sedan - - -	$970
One Ton Truck -	$750

F. O. B. FORD, ONT.

Ford Motor Company of Canada, Limited

Ford, Ontario

WHAT CONSTITUTES A GOOD COW

Are you working for your cows or are they working for you? The Steele County (Minn.) cow testing associatio nanswers this question by telling what 46 cows or 15 1-3 per cent. of the 300 in the association did during the month of January.

Forty-six cows made 71,231 lbs. of milk or better than 8,940 gallons of milk which gives each cow an average of 1, 548 lbs. or 193.5 gallons per month.

During the month of January 2,455.-15 lbs. of fat were produced by these cows. This fat at 47 cents, the average price paid for butterfat in January would be worth $1,149.22, or in other words, each cow porduced an average of $24.98 worth of butterfat. Ten such cows would bring in $249.80 for the month. Why milk 20 cows when 10 will give just as much?

Yes, but it cost a lot of money to feed these cows. Did it? Concentrated feeds, such as grains, bran, oil meal, gluten, etc., $301.61; roughage, including silage, hay, corn, fodder, etc. $187.40. Total cost for the 46 cows, $478.01 or $10.58 per cow. For every dolar's worth of feed they returned $2.35 in butter fat.

The highest producing cow was a Holstein, Spring Brook Beauty Posch 2nd. She produced 77.34 lbs. of fat, valued at $36.35.

Why isn't mention made of the poor cows in the association? That is just the reason these 300 cows are being tested every month, so that the poor cows can be found out and sent to the shambles. There is no guess work; the good cow produces a good record, showing she is a good producer, and she stays in the herd; while the poor cow's record shows her to be a consumer and a boarder, and her record entitles her to only one place—the shambles.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B

Ayrshire Cattle

C. A. Arcbibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

Shorthorn Cattle.

Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Spruce Grove Farm Guernseys

FOR SALE—Four Bulls fit for service also some Yearling Heifers and a few Bull Calves.

D. G. McKAY & SON,
SCOTSBURN, - - Nova Scotia

Newburn Hill Stock Farm

Our present offering is one pure bred Shorthorn Bull, 11 months of age, also a few Heifers from one to three years of age. All of good milking qualities.
Beef, Hay and Potatoes in car lots.
Choice Cultivated Strawberries a specialty
FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
UPPER SACKVILLE, N. B.

Firshade Farm R.O.P. Shorthorns

Present offering, 2 Bull Calves, One Heifer, three years old.

P. R. L. FAIRWEATHER,
Rothesay - - - N. B.

FOR SALE

A handsome, well-grown Guernsey bull. Sire purchased from the Experimental Farm, Ottawa; dam of equally good breeding, and a heavy producer. Will be sold reasonable. Full particulars on inquiry.

SARAH E. MOSES SMITH,
Woodwards Cove, - - - N. B.

Willow Glen Shorthorns!

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

Springbrook Farm Ayrshires!

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

McINTYRE BROS.
SUSSEX, - - N. B.

Advertise in the FARMER

SKIN DISEASE AND PARASITES MOST PROLIFIC SOURCE OF UNTHRIFTINESS AMONG CATTLE

(Continued from page 319)

isolated as the whole herd is likely to become affected, in time, unless this precaution is taken. Even attendants are likely to carry the disease to other animals.

The insects burrow down into the skin and set up an irritation which breaks and runs a watery discharge, the hair falls off in patches and the animal is extremely itchy. One can make sure of this disease by examining a few of the scales under a microscope, when the small germs may be seen.

The treatment must be directed toward destroying the germs. One of the best remedies is zenoleum or creolin at the rate of two ounces or four tablespoonfuls to one quart of water. In mixing pour the water onto the drug in order to mix it thoroughly and then rub it in well all over the skin twice a week until cured. To prevent the disease from spreading wash everything the animal has come in contact with either with the same thing or with carbolic acid water. Feed on soft food and give a teaspoonful of sulphur to a grown animal.

Ringworm is quite common in some herds and quite contagious, especially with young cattle running in a box stall. This is another disease caused by germs burrowing in the skin. They work in circles and, like mange, are contagious to attendants as well as stock.

One of the cheapest and best remedies is to paint the spot with crude peroleum oil. as it comes from the ground, letting the oil extend over into the hair for half an inch all around the circle once a day until cured. Tincture of iodine, used in the same way, is another remedy and should be applied once in three days. Citron salve is also a sure cure and will usually need but one appliication. This wil need to be rubebd in, but no more should be used than is necessary.

Warbles are common in some herds where no attention iis given to keeping the trouble out. It is easily prevented by giving a little attention to the nuisance. It is caused by a large fly, called the gadfly, stinging the animal, usually along the back. This fly lays an egg down in the skin each time it stings, which develops into what is known as the warble.

The symptoms are that small lumps appear in the skin, principally over the animal's back. Toward spring these lumps which contain the grub become pierced and the grub gradually works out, falls to the ground and in a few days matures into another gadfly which flies off to sting cattle again during the summer. These flies may be easily got rid of by squeezing the grub out before the hole is large neough for them toescape and destroying them.

Foot Foul is a very annoying and often a very distressing disease that is also caused by a germ. It works between the toes or trotters often causing small boils to break out and even working up to the top of the hoof. The feet get hot and swollen and very sore causing the animal to lie down a good deal on account of pain in walking. If the disease is allowed to run on it becomes very hard to heal. The disease is contagious and if not attended to spreads to many or all members of the herd.

If the disease has ever ben in the herd the best plan is to spray the feet of all cattle with a large syringe or spray pump occasionally as a preventatiive and to destroy all germs that may be lying about. When first noticed, prompt measures should be taken to subrue it by the use of some good germicide such as enoleum, creolin, or a strong solution of copper sulphate or blue stone; put on as previously suggested. Plenty of force should be applied to a syringe or pump in order to make sure the solution reaches the spot. In putting this on it is not often necessary to fasten an animal as it can be done whlie she is standing naturally. If the case has been allowed to run until it becomes very bad it may be necessary to clean out the hoof and apply a poultice of linseed meal into which should be put some of the liquid mixture.

In a stable where there are milking cows it is advisable to use the blue stone mixture on account of the milk becoming tainted from the smell of the coal tar preparations.

Filthy stables, yards, and mudholes are very favorable to the development of this disease and on this account as well as for many other reasons they should be kept clean and sanitary.

PREPARE TO PROTECT YOUR CROPS NEXT YEAR

(Continued from page 315)

cover, as these are subject to the attacks of many insects, such as weevils etc. Seed peas and beans should receive special attention, and if they are infected they should be fumigated with carbon bisulphide.

In the spring special attention should be paid to the careful preparation of the land and time of seeding. Such special care will result in the securing of a more vigorous growth, and vigorous plants can more successfully withstand insect attacks.

Certain insects are more readily controlled during the winter months. In the provinces of Nova Scotia and New Brunswick fruit growers should make every effort to collect the winter webs of the brown-tail moth; the law requires owners of properties infested with this insect to adopt control measures. Throughout Eastern Canada there is at the present time a widespread outbreak of the white-marked tussock moth, which we expect to be serious next year. FFruitgrowers and owners of shade trees should now destroy as many as possible of the conspicuous white egg clusters in which the insect passes the winter; they can be scraped off the trees, fences, etc., or swabbed with creosote. Much injury next year will be prevented by taking such steps during the coming winter and early spring before the buds burst.

Farmers, fruitgrowers and others are urgently requested to take the fullest use of the offices of the Entomological Branch. Enquiries or calls for assistance addressed to the Dominion Entomologist, Department of Agriculture, Ottawa, to whom all communications may be mailed free of postage, or to any of the officers in charge of our field laboratories in the various provinces, will be given immediate attention and all the help possible will be rendered to secure the protection of crops. It is the desire of all these officers to assist to the fulelst extent of their powers. Let the mhelp you to protect your crops and thus increase our food supplies which are so vitally essential at the present time.

When a nervous, high-spirited horse is kept in a stall for any length of time he is apt to become impatient and express himself by pawing the floor and by other irritating actions. An active vigorous person acts in much the same way when shut up and forced to idleness. The best method of handling cases of this kind is to provide some work. If there is nothing that the horse can be used for turn him out in the barnlot for a part of the time and let him get rid of some of his surplus energy.

Two Cents a Word.

This department is one of the most vaiuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issie. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE—The imported Clydesdale "Woodend Chief" also the imported French Coach Stallion, "Jadis." These horses have quality; tbey always won prizes wherever shown. For further particuiars apply to DAVID REID, R. R. No. 3, Montague, P. E. I.

FOR SALE—Farm containing 550 acres, 250 acres under cultivation. Well watered. Large house. Three barns. Plenty lumber and wood. Also quantity of cedar. 5 miles from Sussex Station, School and Post Office on farm. For further particulars apply to ERNEST BROWN, Piccadilly P. O., Kings Co., N. B.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.

Stallion Gleneur For Sale
Imp. No. 1242

Pure bred Percheron. Foaled 1906. Sure foal getter. His get has commanded highest prices. Reason for selling, have disposed of my farm. Full particulars on application to

WILLIAM JAMIESON,
Sussex Corner, - Kings Co., N. B.

EGGS FOR HATCHING

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We have for sale a breedy, growthy bunch of young Shorthorn bulls, different ages, most of them are bred very strongly along milking lines, yet they would be a credit to any beef herd.
would be a credit to any beef herd.

We are booking orders for spring delivery of our large English Berkshire young pigs. Not the short chubby type, but the lengthy, growthy and large.

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ARSENATE OF LIME

Warning in Regard to Its Use

By G. E. Sanders, Dominion Entomological Lboratory, Annapolis Royal, N. S.

Arsenate in the form of arsenate of lime costs but little more than half of what it does in the form of arsenate of lead. At the Nova Scotia Fruit Growers Association all of the experimenters who used it agreed that the arsenate of lime lime sulphur combination gave less burning of the foilage than the arsenate of lead lime sulphur combination. The experiments of the Dominion Entomological Branch have for two years shown that more apples remained on the tree where the arsenate of lime lime sulphur combination was used thain where the arsonate of lead lime sulphur combination was used. Experimenters and fruit growers all agreed that no injury had followed the use of arsenate of lime and lime sulphur for the first three sprays. These are points well worth considering and when we remember that the material comes in powder form and does not cause any black sludge in the bottom of the spray tank we must admit that the poison cannot be lightly considered.

In the papers and discussions at the N. S. F. G. A. it was found that in some experiments and in several orchards, when used with lime sulphur as a fourth spray, arsenate of lime had given some slight, and in a few cases, serious yellowing. This was without doubt due to the slow breaking up of arsenate of lime liberating small traces of soluble arsenic. If arsenic had been freed in any considerable quantities, as in the reaction of lead arsenate of lime and sulphur, burning instead of yellowing would have resulted.

In many cases yellowing was caused by the grower diluting his lime and sulphur away below the spray calendar and not reducing the arsenate of lime. Knowing that arsenate of lime is unsafe unless protected, we know that it was impossible for this procedure to result in anything but yellowing.

The elimination of small quantities of soluble arsenic, such as causes yellowing, proved an easy matter in 1917. Arsenatet of liime (¾ lb. to 40 gals.), which alone yellows badly, was made safe for four sprays by adding 10 lbs. of hydrated lime to 40 gals. of spray. The soluble sulphur (1 lb. to 40 gals.) arsenate o flime (1 lb. to 40 gals.) combination which normally yellows badly was made safe for four sprays by adding 10 lbs. hydrated lime to 40 gallons of spray. Arsenate of lead 10 lbs. to 100 galons, whiich normally yellows foilage, was made safe in the Experimental Farm experiments by adding 5 pounds of hydrated lime to 40 galons of spray.

For those who wish to retain the good points of arsenate of lime, and the point of cost is an important one, and do away with one defect that showed on the last spray in a few cases, we would recommend the adding of 5 lbs. of lime, either slaked or hydrated, to 40 gallons of spray. We do not beliieve that the addition of lime is necessary for the pre-blossom sprays. We know of no case where it was necessary for the third spray in 1917 but in order to be on the side of safety we would recommend for the third spray 2 gallons of lime sulphur, 1½ lbs. of arsenate of lime and 12 lbs. of water slaked or hydrated lime to 100 gals. of wataetr. This will not yellow apple leaves.

For the fourth spray we are recommending Bordeauax and not lime sulphur. Arsenate of lime is safe with Bordeauax.

While not more than two per cent. of the growers of the Valley had any complaint of yellowing (in a meeting of the Annapolis County Farmers Associationi, 50 men, most of the sprayers, were asked for complaints about arsenate of lime and not a man had any) we feel that the complaints made at the N. S. F. G. A. were well grounded and were due to traces of soluble arsenic. A few pound of hydrated lime will entirely eliminate all danger of yellowing for we overcame a much more serious trouble of the same nature in the soluble sulphur arsenate of lime combination by the same means in 1917.

The low cost, the reduction in burning, the handy powder and the freedom from slugs in the spray tank make arsenate of lime most desirable. The one defect of the new poison which showed in only a few cases in the fourth spray can be easily eliminated as outlined above.

OFFICERS OF N. B. FARMERS' AND DAIRYMEN'S ASSOCIATION

The Farmers' and Dairymen's Association elected officers as follows:

President, C. M. Anderson, Sackville; vice-president, J. A. Bernier, Edmundston; recording secretary, C. M. Shaw, Hartland; corresponding secretary, A. R. Wetmore, Clifton; treasurer, H. H. Smith, Hoyt. County vice-presidents: Albert— . . Mitton, Hopewell Hill; Carleton—Scott A. Shaw, Hartland; Charlotte—Stanley Wilson, St. Stephen; Kent—Simon Bastarach, Buctouche; Kings—H. H. Sherwood, Upham; Madawaska—Elias Daigle, St. Helaire; Northumberland—N. M. Johnson, Chatham Lands; Queens—Fred N. Fowler, Chipman; Restigouche—J. C. Cook, River Charlo; St. John—J. M. Donovan, St. John; Sunbury—M. A. Smith, Hoyt; Victoria—Hans P. Hanson, Peterson; Westmorland—S.Melanson, Sackville; York—John Nich, Burtt's Corner; Gloucester—N. D. S. Doucett, Beresford.

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Do not allow the low prices on inferior goods to warp your good judgment; because you live in the country of wonderful opportunities and you'll have a great many chances to use your money to better advantage than replacing cheap fences every few years.

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Distribution of Seed Grain 1918

Good Seed is scarce—Place your order now with your County Councillor.

The Department of Agriculture has ordered 56,000 bushels of oats and 18,000 bushels of wheat.

Oats will be sold for $1.32 per bushel in bulk car lots, or $1.38 in bags in car lots laid down.

Wheat will be sold for $3.00 per bushel, in bags car lots f.o.b. distributing point for smaller orders.

Local freights will be paid by purchaser.

County Councillors and Agricultural Societies should place car lot orders immediately, stating destination for cars.

Delivery not guaranteed unless orders placed within three weeks, becauseof transportation difficulties.

New Brunswick is expected to bread herself for the duration of the war. Every farmer should grow some wheat.

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FREDERICTON, N. B.

FARMS FOR SALE !

1. Desirable farm for sale, situated at Lower Gagetown, N. B., containing 100 acres or thereby, suitable for growing all kinds of crops; there is a splendid orchard on the property, containing about 500 apple trees of good commercial varieties.

The farm buildings are commodious and exceptionally good and there is ample water supply. Public wharf about one-half mile distant and railway runs through the property.

2. Farm with suitable house and buildings, situated about 3 1-2 miles from Gagetown, extending to about three hundred acres, about one hundred of which is good cropping land, the balance containing a large quantity of valuable pulp and firewood.

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Bean Growing in Nova Scotia

By Prof. P. J. Shaw

Many of our readers grew beans last season on a fairly extensive scale. Hundreds of farmers who were accustomed to purchase their bean requirements grew a sufficient quantity to supply their own families. On four short drills in a town plot te editor of the Maritime Farmer grew a sufficient uantqity of beans to supply a family of eight persons with string and dried beans for one year. The followin article "Bean Growing in Nova Scotia" will interest all our our readers:

Beans are grown in this Province both for green string beans and for dry shell beans. For the first purpose the green and wax podded varieties of dwarf or bush beans are used and also the pole beans. For ripened dry beans dwarf beans are used.

The following article deals with the growing of dwarf beans for the ripened dry seed. The object is to call attention to the desirability of increasing the area in beans in Nova Scotia next year as a special war-time measure and to make a few suggestions as to varieties, source of seed supply and general culture of the crop.

As a field crop in Nova Scotia beans are grown most extensively in the counties of Annapolis, Kings, Hants and Lunenburg. It is probable that in these counties the soil and climate are better adapted to bean culture than in other parts of the Provoince, although North Queens, parts of Colchester, Cumberland, Pictou and Antigonish seem well adapted to this crop. The following table taken from the Census of 1910 shows the ocreage and the yield of beans in the different counties of the Province:—

Annapolis	267	4088
Kings	220	3197
Hants	75	1279
Lunenburg	70	1220
Queens	23	403
Halifax	13	339
Antignoish	19	301
Digby	8	221
Pictou	8	204
Guysboro	12	192
Yarmouth	7	104
Colchester	4	71
Cumberland	4	64
Shelburne	2	23
Cape Breton & N. Victoria	1	28
Capo Breton South	1	20
Inverness	1	12
Richmond	0	0
	735	11766

The above figures are for the year 1910, the latest year for which the census gives the statistice. In 1917 the area ni beans in Nova Scotia was estimated at 1,000 acres or more. The rProvince may be divided into two parts. (1) The part comprisgn thiose counties in which 1.000 bushels or more of beans per county are produced each year and (2) the rest of the Province where the yield per county is a few hundred bushels or less. In the first area the problem of grownig ripe beans presents no serious difficulties. If reasonable attention is given to cultural details any one of several varietesi can be grown with success. In the other part of the Province it is necessary to give more attention to the choice of suitable varieties and to the selection of the soil, its preparation and cultivation.

One of the most important matters is to obtain a supply of good seed. Home grown seed, if well grown and free from disease, is better than imported seed, since it is more lkely to be of a variety suited to local conditions. There is now an abundance of this seed for sale ni the bean growing sections of the Province. In order to insure a supply of the early varieties for section of the Province with short seasons the Horticultural Division of the Agricultural College has bought a number of bushels to sell at cost to planters wishing these varieties next spring.

Every one who intends to grow beans next year should provide himself with a supply of seed as early as possible. Seed beans are likely to advance in price before planting time in 1918. Seed merchants now say that there will be a shortage in the supply of beans next season. One large seed firm states that their seed growers this year report a yield of only 15 to 20 per cent. of a full crop of beans, due to early falll frost. The important point is not to delay in getting your seed beans. Buy now and be ready with hte best seed hw neplanting time comes.

With some families baked beans in the past have formed a regular article of diet twice a week, Saturday night and Sunday morning. In the lumber camps and where men are engaged in hard, physical, out-door labor they are served oftener thann this, constituting one of the most important parts of the rations. When beans of the right variety are chosen and cooked as some good cooks know how to do it and served with brown bread and butter, they not only constitute a wholesome food but a delicous treat, somethnig to be looked forward to.

On account of the probable shortage of meat in the near future, it is not unlikely that beans may have to form a larger part of our diet than in the past and be served oftener than twice a week. Because of their composition the are better adapted to take the place of meat than almost any other vegetable. Besides containing fat, meat is chiefly valuable for its protein the material used in building up muscular tissue. Beans also are rich in protein and compare favorably with other foods, as the following figures for ther anailysis show

Even though one cannot grow beans for sale, it is possible on a small area to grow enough to supply the family for the greater part of the year. A pound of beans when baked is sufficient for 10 helpings. For a family of five, then a buhsel would be sufficient for 120 meals. A bushel can be grown under ordinary conditions on 8 square rods. Under garden conditions it might be grown on 4 square rods. That is, a piece of ground of the right kind and situation, about 33 feet square might produce enough beans to serve a family of 5 for 120 meals. If served at four meals a week they would be sufficient for 30 weeks.

If the conditions are right, beans are one of the easest crops to grow. They are a short season crop, planted after danger of frost is past, and should reach maturity before the first fall frost. This may mean etaoni shrdul frost. When failure with this crop occurs it is often due to the beans not having reached maturity before the first fall frost. This may be due to one or other of several causes. The beans may not have been of the right variety, they may not have had sufficient amount of a needed plant food, the land on which they were planted may have been too cold or wet, the season may have been unfavorable, or the seed infested with disease. The important thing for the farmer to do is to make all the controllable conditions as nearly right as possible. With a normal yield of beans, at present prices, there is ont a more profitable cash crop to grow. The growing of beans also furnishes one of the most effective means of adding to the food supply of the country and reducing the cost of living. They can be grown profitably on a large or small scale, whichever is more convenient to the grower.

Varieties of Beans

The varieties of field beans grown in Nova Scotia comprise the following: Yellow Eye (including the ordinary Yellow-Eye and Improved Yellow-Eye) Pea beans (including Snowflake Field beana and California pea bean), the Soldier bean, the Early Yellow Six-weeks, a yarge white marrow bean and several varieties with local names, or no names excpet beans. Among the local varieties are a white bean mottled or speckled with dark purple, called ometimes Speckled wax or Turkey bean, and a reddish brown bean with dark markings on the sides resembling Improved Goddard, but smaller than the Goddard. The former bean is grown in considerable quantities in the Annapoli Valley, the latter quite largely in Antigonish County.

The horticultural classification of beans includes four types,—pea, medium, marrow or marrowfat, and kidney. For the purpose of this article beans grown in this Province are divided into into early, medium early, and late, according to the length of season required and the time of ripening. Early beans are represented by such kinds as Early Yellow Six-weeks, and the reddish brown Antigonish bean. Medium Early by the early Yellow eye. Soldier bean, and Snowflake Field bean and other white pea beans, late beans by the Improved Yellow eye. For the Annapolis Valley and parts of the Province with similar soil and season any one of the early or medium early varieties is sfae.

For most parts of Eastern and Nortehrn Nova Scotia, except a few specially favored sections, one of the early maturing varieties of the first group should be chosen.

The Early Yellow Six-weeks includes two strains, a kidney-shaped bean of pale yellow color and somewhat flat in shape and a bean of the same color but shorter and more nearly round, called locally Six-weeks Round. Both strains of the Six-weeks ripen in a short season and seem to be well adapted to all sections of the Province.

The ordinary Yellow Eye, is a white bean with a yellow area around the seed scar and belongs to the marrow or marrowfat group of beans. It is extensiively grown in the western part of the Province and to some extent in the Eastern part.

The improved Yellow Eye is somewhat longer and larger than the ordinary Yellow Eye and requires a season ten days or two weeks longer. It is not recommended as a safe variety even in Western Nova Scotia, although it is grown and ripened in that section.

The Soldier bean, so named because of the fancied resemblance of the colored area about the seed scar to a soldier, is earlier than the Improved Yellow Eye but not as early a the Early Yellow Eye. It is a good yielder and comparatively free from disease. It is a good variety for the Annapolis Valley and similar areas.

Several varieties of white pea beans are grown in Nova Scotia with success. These are generally good yield-

(Continued on page 364)

Composition of Navy Beans Compared With Other Foods

(From Cornell Reading Course for the Farm. Lesson 124.)

Food	Percentage of Water	Percentage of Protein	Percentage of fat	Percentage of Carbohydrates	Percentage of Ash	Fuel Value per lb. in Calories
Navy Beans	12.6	22.5	1.8	59.6	3.5	1,605
Potatoes	78.3	2.2	.1	18.4	1.0	385
Lean Meat	70.0	21.3	7.9	0.0	1.1	730
Milk	87.0	3.3	4.4	5.0	.7	325
Eggs	73.7	14.8	10.5	0.0	1.0	720

CLEANING SEED

The question of Good Clean Seed is now agitating the minds of the farmers of the Maritime Provinces. Good seed grain is scarce and high in price. The fanning mill will therefore be more vigorously used this season than ever before. Read the latest word in cleaning seed.

In cleaning seed the aim should be to produce a sample containing only the larger and plumper kernels of the kind of crop desired. To produce a sample of this kind it is necessary to remove impurities such as straws, chaff, dirt and other inert matter, weed seeds, seeds of crops other than the kind desired, and any small, shrunken, immature and otherwise inferior kernels of the kind cleaned.

Improper cleaning of seed is in most cases due to lack of the necessary riddles and screens, or to the mill not being properly regulated. Any good fanning mill in which thorough control over the air blast is obtained, and in which a series of four or mire riddles and screens may be adjusted at will, may be fitted and operated to do fairly good work.

General Principles

Imopssible to give Definite Directions.

It is impossible to give instructions for fitting and operating a mill which will apply in all cases, as different samples of the same kind of seed may require different treatment, even in the same mill. On the other hand, the same sample of seed would require different combinations of sieves in different mills, depending on the length and slope of the sieves, the direction and violence of the shake, the strength of the air blast and the way in which it strikes the seed and the rate at which the grain is passed over the sieves. The operator will have to depend on his own judgment and ingenuity in fitting a mill for doing the best work on any particular lot of seed. Even the directions furnished by the manufacturers of the mill should not be followed blindly. These directions are for cleaning the average lot and cannot be correct for every lot of grain of the same kind. Only general principles can be laid down for the guidance of fanning mill operators.

Importance of the Air Blast.—The air blast in a fanning mill is intended to remove as much as possible of the lighter material without unnecessary waste of plump seed; it is not strong enough unless a few good seeds are being blown out with the chaff. This is the only way of taking out some impurities which, on account of their size cannot be eparated by sieves. The work of the air blast is of double importance on account of the fact that the removal of the light material assists the sieves by (1) removing part of the grain that would otherwiise have to go through them; (2) preventing them from becoming clogged by this light material. In some mills this fact is taken into account when the air blast is increased, by automatically decreasing the shake of the sieves.

The air blast is a very important feature of a fanning mill, and it will pay to take pains to experiment to find out just what can be done with it. It is often advisable to run seed through the mill rapidly at first to take out dirt and chaff by means of the air blast, and then to clean it more slowly once or twice, using both sieves and air blast.

Full Equipment of Sieves Necessary.—It is most important to have a full equipment of both wire and perforated zinc riddles and screens of ali sizes made for small seeds. The want of any of these may entail a waste of good seed or other loss many times greater than the total cost of the full equipment of sieves.

Before fitting the mill for cleaning trials by hand should be made with the sieves arranged in series one over the other. It must be remembered however, that the results in the mill will not necessarily correspond to the work done by the same sieve used in the hand. It is only by actual trial in the mill that one can decide finally what sieve is best for the sample in question.

What the Top Sieve Accompliishes.—The riddle or top sieve should be just large enough to let the seed through a nd hold back the larger impuriaies. When weed seeds similar in size to the seeds in which they occur are very prevalent, their separation cannot be satisfactorily accomplished. I ncleaning such seed regulate the slant of the riddle, amount of shake and size of the opening in the hopper so that the sample will travel slowly and as much as possible of the seed will find its way through the riddle. Impurities larger than plump seed will travel the length of the sieve and fall behind. Do not give the riddle so much shaake or have it at such a pitch that much of the seed runs off with the weed seeds. Sometimes it is necessary to put small blocks of wood under the back of the mill to reduce the slant of the riddle.

The Work of the Lower Sieve.—The screen or lower sieve should be just large enough not to let the good seed through. It is not large enough unless small kernels of the kind of seed being cleaned are taken through with the weed seeds. Lower sieves are usually made of woven wire.

Seed should Travel Slowly over Sieves.— Usually when grain contains a large number of impurities the longer it takes to travel over the lower screen the more impurities are removed. Weed seeds much smaller than the grain in which the occur are often not removed when the operator is attempting to clean too fast and has too much seed on the lower sieve, or has given it too much slant.

Delivering Grain Behind Mill Sometimes Advisable.—More satisfactory work can sometimes be accomplished in cleaning a lot of seed by arranging the sieves so that the good grain is delivered at the back of the mill or in some place where impurities are usually delivered.

Sieves—Description and Numbers

Fanning mill sieves are of two general types, those made of perforated zinc and those made of woven wire. Perforated zinc sieving has either round, oblong or triangular perforations. There are square and long-mesh woven wire sieves.

The diameter of the perforations in zinc sieves is usually given in sixty-fourhs of an inch. For example, an "8" sieve usually means one with perforations 8-64 of an inch in diameter. The next smaller and larger sizes are 7-64 and 9-64, respectively, although half sizes sometimes occur. A similar system is used for the triangular and oblong perforations.

The mesh of woven wire is usually expressed by giving the number of wires to the inch each way; thus an 8 by a woven wire is one made of eight wires to the inch each way; a 2 by 10 contains two wires to the inch one way and ten the otehr. The size of the opening will vary with the diameter of the wire used.

The numbers which manufacturers put on the various sieves supplied with their mills often have no reference to the size of the peroarftion or mesh of the woven wire of which the sieve is made. For example, a sieve which a manufacturer designates as No. 12 may not be a 12-64 perforatated zinc or a 12 by 12 woven wire. It is not a difficult matter, however, to determine the size of the perforations or mesh of the woven wire cloth by means of a proper rule.

Cleaning Grass and Clover Seeds

It must be remembered that the sieves mentioned below are not recommended as the best or the only sieves for cleaning the various seeds in puestion. They are mentioned as examplples of the type of sieve most useful for the various purposes. The specific sieve required for cleaning any particlar lot of seed depends on a variety of circumstances as explained above.

The seeds of many of the weeds that grow in red alsike clover and timothy and ripen at the same time are of such sizethat they are difficult or impossible remove by sieves in an ordinary fanning mill. Few fanning mills are fully equipped with sieves for cleaning small seeds; indeed, most of them are not designed for this work. However, seed that contains a very large number of small weed seeds or that contains only a few more weed seeds than are permitted in seed that may be legally sold under the Seed Control Act may often be cleaned to grade without heavy- dockage, provided the proper sieve is available.

If there is a properly equipped and operated power cleaner within a reasonable distance it will usually pay to have seed cleaned by it.

For cleaning small quantities, hand sieves may be found to be most satisfactory and economical.

Red Clover.—A sample usually contains few weed seeds larger than the clover seed. Ragweed, if none of the outer hulls has been removed in threshing, should be separated from the clover by a 1-15 inch peforated zinc riddle. Sticks, pieces of straw anad anything larger than the clover run over this sieve.

A long mesh woven wire screen is better than one made of square mesh wire cloth for cleaning red clover seed. The 4 by 24 is often employed for this purpose, but the exact mesh required will depend on the size of the clover seed and the kind of impurities t obe removed. A long mesh sieve will hold all the good clover, allowing the smaller imprities to pass through. This sieve, assisted by the air blast, hould take out practically all of the pale plantation, much of the mayweed and lamb's quarters, and many of the ribgrass as well as shrunken clover seeds. Besides the 4 by 24 sieve, the 4 by 25, 4 by 26, 4 by 28, 6 by 24, 6 by 28, etc., are also recommended as lower sieves for cleaning red clover, their efficiency depending upon the size of the seeds composing the sample.

The 22 by 22 woven wire screen is very useful in the lower shoe for taking out sheep sorrel and seeds only slightly smaller than the clover. In some cases the 20 by 20 or 18 by 18 may be required, but this will allow considerable of the smaller clover to pass through.

Hulled ragweed, docks, catchfly, foxtail and black medick are very near the size of clover and are impossible to remove by means of an ordinary fanning mill. Fields must be cleaned of these weeds before clover seed can be grown with profit.

Alfalfa requires similar sieves to those recommended for red clover.

Alsike.—A zinc riddle with perforations ⅛ inch in diameter is about right to remove weed seeds and other impurities larger than alsike, includngi Canada thistle and docks. This sieve is used above, the larger impurities beinig held and run off at the end while the alsike passes through. With this sieve the air blast should be correctly controlled in order to insure a good separation.

The 24 by 24 woven wire sieve (contains 24 wiires to the inch each way) used in the lower shoe, is one of the most useful sieves for cleaning alsike. It will improve the general quality of the sample by removing the small and and immature alsike along taoi wyp immature alsike along with the smaller weed seeds—chickweed, worm-seed mustard, plantain, shepherd's purse, and seeds similar in size. These small materials pass through the 24 by 24 sieve while th eplump alsike is held back.

Timothy.—Weed seeds and other material larger than timothy are removed by a sieve which with the aid of the air blast will hold back the impurities and run them over the end of the sieve while the timothy passes through. A zinc sieve with perforations 1-22 inch in liameter, if used with only a slight slope and given a short puick shake, will accomplish this. This sieve should be used above and should take out docks, Canada thistle chicory, and imprities of similar size. If the riddle is used with much slope and given a wide violent shake much of the timothy will run over with the imprities. By exercising a little ingenuity the 1-22 inch perforated zinc sieve may be used to advantage in most mills. The 22 by 22 woven wire sieve is sometimes used as a riddle in cleaning timothy seed.

For removing sheep sorrel, ribgrass, black medick, catchfly, wild mustard and other impurities only slightly larger than timothy, a hand sieve made of 1-25 inch perforated zinc is recommended whe nnot too large a quantity is to be cleaned.

Woven wire screens are recommended for the separation of weed seeds smaller than timothy; they should hold the timothy while the weed seeds pass through. They are used below and are not assisted by the air blast.

It is difficult to give explicit directions as to the proper mesh of woven wire to be used in this work. A square mesh containing 28 or 30 wires to the inch each way is often used. For plump seed the 28 by 28 is preferable; the 30 by 30 is used for smaller seed. If the screen is long and the timothy contains only very small weed seeds such as cinquefoil and northern gentian, a 32 by 32 will giv egood results, especially where the timothy itself is quite small. Instead of these mesh sieves the following long mesh are sometimes used: 6 by 30, 6 by 34, 6 by 38, or 8 by 40. One of these woven wire sieves for removing small weed seeds is indispensable for cleaning timothy.

Weed seeds almost the same size as timothy and therefore difficult of separation are small-seeded false flax, ox-eye daisy, ribgrass, golden dock, stitchwort, mayweed, catchfly, black medick, sheep sorrel, blue-eyed grass, lamb's quarters, and wall-flower.

Cleaning Cereal Grains and Flax

In cleaning cereal grains for seed it is often advisable to remove from one-third to one-half of the total bulk. When grain is thus thoroughly cleaned most of the weed seeds will be removed with the screenings. Some of the weed seeds are difficult to separate, but most of them can be removed by a good fanning mill if the proper sieves are at hand and sufficient time and pains are taken to determine the best combination of size and slope of sieves, shake, air blast, and rate at which the grain is passed over the sieves.

In cleaning cereals, especially wheat attention should be given to the removal of the smut. Unbroken smut balls are impervious to the solutions used to destroy smut spores on the surfac of the kernels. Unless all smut balls are removed from a lot of wheat, the grain iis liable to be reinfected, thus rendering the labor of treating it of no avail, by the breaking of a few of these smut balls. One smut ball contains millions of spores, enough to infect quite a large quantity of grain. Bulletin No. 73 on "Smut Diseases of Cultiivatetd Plants" says:—

> "The fanning mill will remove smut balls very completely from the wheat, and owing to the danger pointed out, any wheat containing smut balls should be sent

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Food Controller Prohibits Millers From Forcing Flour Sales

Flour Mills Are Not Allowed to Make it a Condition to the Sale of Feeds That So Much Flour be Taken to Each Car---Will be Closed if They Persist

Some months ago the Maritime Farmer undertook to arrange for the purchase of feeds for a number of Agricultural Societies in the Maritime Provinces. It was not long before the fact developed that the millers were not disposed to sell their feed direct to the farmers. While the farmers might be expected to whole-heartedly enter into the movement to help win the war by their increased production they were denied absolutely the right to get back their by-products except through various middle channels which meant increased cost to them. Early in the summer of 1917 when hundreds of straight cars of feed were being shipped to various points in the United States, the Canadian farmers were refused delivery of either bran or middlings in straight cars.

In August the Maritime Farmer called the attention of Hon. J. W. Hanna to this condition. Four months later action was taken to prevent the export of these feeds. That is, after the supply had become exhausted and the millers had made all the money they could possibly make out of the movement of feeds, the Food Controller undertook to lock the stable door.

In October the Maritime Farmer was promiscd that straight feeds would be sold the farmers and would be supplied at cost. Nothing resulted however, except that the Campbell Flour Mills, producers of "Cream of Wheat Flour," came to the rescue and supplied feed to the extent of their ability. The Maritime Farmer wishes to express its appreciation of the action of the Campbell Flour Mills and trusts that the readers of this paper will appreciate the service given.

In November the Food Controller requested the Live Stock Branch of the Dominion Department of Agriculture to take over the responsibility of handling feeds. With a flourish of trumpets it was announced that the farmers would be supplied with feed and the beneficiaries were asked to bow down and offer adoration to the deities who had conferred the boon. However, beyond securing a few cars of feed in the early part of December, the feed section of the Live Stock Branch of the Department of Agriculture died (let us hope) a painless death. The scheme, however, has supplied camouflage from its inception to the present day, when straight feed has been demanded, and has been a useful goat to which the Food Control Branch has been wont to refer the Maritime Farmer and other inquirers.

As the Food Controller of Canada has stated directly and indirectly that the safety of the Britiish Empire and the lives of the men in the trenches depended upon the conservation of wheat flour, and as the practice of the millers has been to demand that feed purchasers take so many barrels of flour to each car of feed, it occurred to the Maritime Farmer it would be well to give the Food Controller credit for knowledge whereof he spoke. Farmers in their conventions were told by representatives of the Food Control department that mid-summer would see food so scarce in Canada that actual want would be the lot of those of us who have not gone to the front. Deeming that the safety of the British Empire, the lives of the sons of the Canadian farmers, the spoilation of Canadian homes and the possible violation of the chastity of Canadian women, to be matters of more weighty import than the convenience and interests of the milling companies, the Maritime Farmer protested against the sale of feeds when the taking of flour was made a part of the contract. This paper considered that if life could be conscripted, then it should be a very easy matter to conscript the services of the flour mills of this country.

The discussion between the Maritime Farmer and the Food Controller led to a declaration by that official that if instances could be furnished him where the sale of flour was made a condition to the supply of feed, he would close any mill so offending. The Maritime Farmer did not think itself called upon to act as a detective and suggested to the Food Controller that he could find ample evidence of such transactions on the letter files of any flour mill in Canada. The Maritime Farmer further offered to pay for an advertising campaign so that the public might be informed that it was a breach of law on the part of the millers to insist on flour being taken by a prospective buyer of feed. The offer was declined. The Maritime Farmer further offered to give its services free pay its own railway and hotel expenses if the Food Controller would appoint one of its employees as his representative to get such evidence and to clothe such official with power to demand access to correspondence covering such matters. That offer has never been acknowledged.

Then it was determined by the Food Control Office that feed and flour must be handled through the usual channels. That is to say, it must go through the wholesaler and retailer. A price was fixed for bran of $24.00 per ton f.o. b. Fort William and $30.00 for middlings f. o. b. Fort William. This made the price delivered at Maritime points $37.50 for bran and $42.50 for middlings. The Food Controller further stipulated that merchants handling these materials should charge a profit of $1.00 per ton on feed sold for credit. This regulaon feed sold for credit. hTis regulation would make the legal price as follows: bran, cash, $38.50; middlings, cash, $43.50; bran, credit, $39.50 and middlings, credit $44.50.

That this has been exceeded in all parts of the Maritime Provinces is vouched for by farmers in all sections of New Brunswick. Fifty dolars per ton for middlings seems to be the popular price. It may be stated that in cases where these prices are exceeded and information is laid with the Food Controller that he is prepared to take action against the person so offending.

In this connection the following letter which was received by the Maritime Farmer will be of interest to those interested in the feed and flour game.

"As soon as I receive the full data in answer to the charge will lay same before you."

"We have notified the mills that unless this practice of endeavoring to force out the sale of flour with cattle feed is stopped that we will cancel the license of the miller and prevent him operating unless he desists from such practice."

"In addition to individual cases have written the secretary of the Millers Committee, pointing out that they had better use their influence to stop this practice and so save cancellation of licenses. The committee in session today have pedged themselve to do their best to stop same in the future."

"The above is mentioned to you so that you may realize that your effort on behalf of the farmers has brought forth fruit."

"Unfortunatetly there seems to have been a misunderstanding arisen out of our correspondence. The writer is very anxious that such shall not exist, and if there is anything that I can do to remove same or to further the good work in which I understand you are very active, it will be a great pleasure for me to do so, and I will be glad to hear from you respectinig same."

Yours very truly,
CANADA FOOD BOARD,
per Frank H. Keefer,
Counsel and General Adviser.

To Mr. J. D. McKenna,
Sussex. N. B.

This indicates a geat victory on behalf of the Maritime Farmer. Merchants and others desiring to purchase feeds should promptly notify the Food Conrtoller in cases where prices quoted are exceeded and where the condition is imposed that the buyer take flour. The Maritime Farmer considers that not only has it won a victory for the farmers but if the contention of the Food Controler is right, that the safety of the British Empire depends upon the conservation of flour this paper has struck a pretty hard bolw in behalf of that greatest of all Empires.

The Maritime Farmer cheerfully accepts the offer of the Food Controller made on March the 8th. It believes itself to have been in the right during its fight for the saving of the lives of the men in the trenches, the preservation of the British Empire and a fair deal for the farmers of this country. The promise of the Food Controller is an explicit one and he will be judged by the result of his ruling. The Maritime Farmer is prepared to co-operate with Mr. Thomson, to bring its influence to bear on the farmers of thi scountry in order that they may be exhorted to help win the war. It does maintain, however, that if the farmers render this service, it is up to Mr. Thomson to see that they are amply protected. There should be no more letters written from his office to Agricultural Societies discouraging them from buying co-operatively. There should be no more special pleas made form his office on behalf of the millers who have flour to sell. It should be a fifty-fifty proposition between Mr. Thomson and the farmers of this country. The Maritime Farmer fired the first shot for increased production in August 1914. It hopes to be in the firing line to the end of the game and it believes that if the farmers are to devote their efforts to increase production, then some other industries in this country, including flour mills, should be expected to come over with at least a little patriotism.

To say that the millers should be allowed to do business as usual when there is nothing going on as usual in this world is asking too much of a long suffering public.

Farmers Getting Together

United Farmers of New Brunswick are Organizing in Carleton County --Rest of Province to be Taken in Later

The United Farmers of New Brunswick, if the name of the newest Farmers' Association in New Brunswick and the movement is off to a good start in the county of Carleton. Already many branches of the Association have been formed and demands are coming in from all sections asking for meetings, to be addressed by the organizers. However, those interested are doing all that men can possibly do and day after day are meeting new friends, who have at last been brought to a realization of the need for co-operation among farmers and the lasting benefits that must result from a proper cementing together of their forces. Possibly there may be hitches in the future and disappointments, but the game is on foot and the result of the splendid work being done in behalf of a real union of farmers cannot fail to bear fruit.

Among those who are taking part in the organizing of the United Farmers are Messrs. C. L. Smith, Woodstock, C. Gordon Sharpe, Pembroke, and Thomas W. Caldwell, Florenceville. Mr. Sharpe is the official organizer. All are men of high standing and are favorably known in the county of Carleton. They are paying all their own expenses anad are travelling to all parts of the county, holding meetings and assisting newly formed branches to get down to business. Later they will extend their work in other directions. Plans have alredy been perfected for the holding of a large central convention next summer which will be attended by hundreds of members of the organization and the movement will then be given further impetus. The three gentlemen mentioned appeared before the Farmers and Dairymen's Association and laid their plan before that body. Later they met the directors of the New Brunswick Agrciultural Societies United and the two bodies decided, that having the same objects in view, they would work together and each would help the other.

The United Farmers enjoys a constitution similar to that adopted by the Grain Growers of the West, a body which exercises a very great influence on the public opinion of that section of Canada. The objects of the United Farmers, are in part:

(a) By fostering mutual understanding.

(b) By encouraging the study of

(Continued on page 363)

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

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MARCH 19, 1918

DATES OF ISSUE.

March 5-19
April 9-23
May 7-28
June 11-25

THE UNITED FRUIT COMPANIES SUCCESS WITH CO-OPERATION

At a late meeting of the Director's of the United Fruit Companies, the Secretary gave a brief resume of the half year's busniess.

Beginning but ten years ago with seven members doing a business of only a few thouands of dollars, the Company rapidly increased its volume of business until last year under the vigorous management of A. E. MacMahon, it reached a total turnover of $,160.000. The Secretary reported that this year to date $350.000 worth of feed and flour had been bought and distributed among the members, while their full requirements of fertilizers, seeds, spray materials, etc., had been secured at most satisfactorp prices. When it is borne in mind with what intense anxiety those outside of the co-operative movement are looking about for similar supplies it will be readily seen what an advantageous position the members occupy. The protection which the United Fruit Companies is thus able this year to afford its members can hardly be overestimatetd.

Another very satisfactory part of the Company's business is thePotato business. Mr. R. N. Clark, the Company's representative who has just returned from Cuba, was again able to present a most satisfactory report. Previous to the organization of the United Fruit Co. potato buying always began in the fall at 40c. per bushel, dropping very quickly to 35c., at which price the bulk of the potatoes were marketed. Last year, after deducting all necessary hauling cahrges, the Company was able to allow its members three dollars and twenty cents ($3.20) per barrel. This year, notwithstanding the larger production of both Canada and the United States, the Company hopes to do even better.

As co-operation was originally begun in the Valley solely to market fruit, it will be seen that in addition to fulfilling its first purpose—always a most difficult problem and this year especially so since the war has cut off the Europeaan markets—co-operation is performing in addition to this a most valuable service for its members.

Fruit so far marketed which includes over seventy-five per cent of the crop, has brought the members fairly remunerative prices and there are those who freely predict that the apple season will end with a measure of satisfaction to the rgower far greater than the most sanguine could have predicted at the beginning of the season.

What the United Fruit Companies of Nova Scotia have been able to accomplish in the way of successful co-operation may well be emulated in many sections of Maritime Canada, where heretofore concentrated effort was sadly neglected.

OLEO MARGERIN

The introduction of Oleo Margarin on the Canadian markets has not given the redress to the masses that would like to procure butter or a butter substitute at lower prices than they can at the present time. The Maritime Farmer predicted from the time the movement to throw down the bars to Oleo was first mooted that this would be the case. Oleo is sold for a price so near that of the genuine article that the consumers prefer to pay a trifle extra and get the pure unadulterated "cows butter" that they have been accustomed to use in the past.

The following series of question answered by Dr. Wiley in a recent issue of "Good Housekeeping" will be of interest to our readers in general:—

Banquo's Ghost Will Not Down

"For the past two months we have used "Nut Margarin" exclusively as a butter substitute. During the last mnoth my husband and myself have experienced indigestion and headaches and sore gums. We had both been in good physical condition prior to the last few weeks. Will you kindly give us your opinion on the matter."—Mrs. K. S. C., New York.

"As a result of my investigations of benozate of soda in human food I made the following statements, which I quote from page 1293 of Bulletin No. 84, part 4, Bureau of Chemistry:

'It is evident that the administration of benzoic acid, either as such, or in the form of benzoate of soda, is highly objectionable and produces a very serious disturbance of the metabolic functions attended with injury to digestion and health. . . .

"These injurious effects are evident in the medical and elinical data which show grave disturbances of digestion, attended by phenomena which are clearly indicative of irritation, nausea, headache, and in a few cases of vomiting."

You will see from the above that indigestion and headache may probably be due to the influence of benzoate of soda. I never noticed sore gums, however, in my investigations. This is more indicative of poisoning by calomel.

Not For Children

"In connection with Mr. Hoover's recommendation that butter substitute be used wherever possible, we have been trying Nut Margarin, as per label enclosed. We are somewhat in doubt as to the advisability of using this product for growing young children, especially as we note that it contains one-tenth of one per cent. of bezoate of soda. Also can you give us the name of one or two others in the manufacture of which it is not necessary to use benzoate of soda.—M. H. M., New Jersey.

"As far as I am concerned, I should never give my children Nut Margarin, Oleomargarin, or any other margarin, as a substitute for butter. Butter contains a vital principle necessary to the growth of children which none of its substitutes possess. I should never give children nor grown persons in my family food products containing a preservative, such as benzoate of soda. Benzoic acid is regarded as a toxic agent by all physiologists. The human body also regards benzoic acid as a toxic agent, and immediately convetrs it into hippuric acid, in order that it may do as little harm as possible. Food products that contain benzoate of soda are inferior in quality to similar foods manufactured without it."

ENGLAND ESTABLISHES OFFICIAL SEED CONTROL STATION

The establishment of a system of Official Control of seeds in England and Wales is announced in the "Journal of the Board of Agricluture" (England) for December 1917.

The opening of the official seed labratory and the passing of an order requiring that the principal kinds of agricultural seeds be tested and when exposed for sale labelled with the essential facts in regard to their purity and vitality, is an evidence of the advance in the application of Science to Agriculture brought about by the vital needs of food production.

In opening the station, Mr. Prothero, President of the Board of Agriculture, said that a good deal of inferior seed found its way to the famrer, and during the war the inferiority had increased. Owing to the closing of some agricultural colleges and the reduction of the staffs of others there had been less seed-testing during the war than usual. The increase of food production was a matter of national importance, and good seed was one of the most essential reuqisites for that increased production. The farmer must be provided with a supply of pure seed of good germinative power.

In Canada we have had a seed laboratory at Ottawa since 1902 and one at Calgary since 1907. Duirng the last year 12.431 samples were tested at Ottawa and 13.547 at Calgary.

SWITCH ON

A dairyman who practices cow testing wrote recently, "I have just sold a grade cow for three times what she cost me three years ago. I could not have sold her had I not kept records.

Another letter reads, "Please send me more record forms for twelve cows, my best cow made one hnudred and seventeen dollars profit over her feed cost last year."

A typical letter runs, "I would like you to send me forms for daily weights for twenty cows. We have weighed each cow's milk for three years and would not care to go back to the guess work system again."

Such letters come frequently to the Dairy Branch at Ottawa from men who believe in cow testing, they know that it pays to weigh and sample each cow's milk, they are on the right track to increased yields, lower expenses, larger profits.

To continue dairying without individual cow records, but with only the unsatisfactory "average" of the herd, is simply to remain on the switch instead of being on the main double track of progress and profit. Don't let insufficient cow knowledge switch you off.

THE MILKING MACHINE

The object of this article is to put before the dairy farmer the value of the mechanical milker under the present conditions of labour on the farm.

There has been in the minds of many dairy farmers a great deal of prejudice against the use of a mechanical milker, but the present is no time to let prejudice stand in the way of increased production.

Eevery dairy farmer with a herd of 12 or more cows should consider seriously the installation of a milking machine.

The experience of an ever-increasing number of practical farmers, coupled with that of a number of our Experimental Farms and Stations, goes to prove that these machines are decidely advantageous.

Cost of Installation

The average cost of intsallation, taking into consideration the five most popular machines on the market, would he about $500 for an outfit to milk four cows at once.

Such an outfit would be large enough for a 25 to 35-cow herd.

For a 20-cow herd a 3-cow outfit would be sufficient. For a 12 to 15-cow herd a 2-cow outfit would be sufficient.

For each reduction of nne unit in the installation there will be a reduction of approximately $100 in the cost price.

This brings the average cost price to $16.60 per cow for the large herd; $20.00 per cow for the medium-sided herd; and $25 per cow for the small herd.

This in turn goes to show that while the cheapest installation for work-done is with the large herd, nevertheless the first cost is not excessive in the case of a small herd.

Cost of Operation

The annual cost of operation for a 25 to 35-cow outfit, including repairs, power, labour in caring for engine and washing machines, interest on investment, and ten per cent. depreciation on machine would amount to approximately $225.

The above is approximately one-third of what the farmer is at present paying his hired man, where the board is not taken into account.

Divided between 30 cows, this brings the running expenses to two cents per cow per day.

Above Cost Compared With Cost of Hand-Milking

The average hired man will not milk more than seven cows per hour, which at 25 cests per hour, costs 7.2 cents per cow per day for hand-milking.

One man with a milking machine can milk 20 to 25 cows per hour, which brinbs the total cost of machine-milking, including the above-mentioned daily running expenses, to 4.5 cents per cow per day.

This is a saving of considerably over one-third and in a large herd would enable the farmer to dispense with at least one, if not two, men, or it would liberate these men for other important lines of increased production.

It also enables one man to milk many more cows than it is physically possibile for him to milk hy hand.

Uniformity in Milking

Not only does a machine decrease the cost of milking, but it gives uniformity in milking.

All cows are milked in the same manner every day, and every good dairy farmer knows this is important and that it is hard to obtain wtih the general run of famr hands.

Reliability of Service

A machine when properly installed and equipped with a reliable source of power is always there ready for work.

Breakdowns are comparatively rare and usually easily remedied.

Wear and tear is not excessive, considering the nature of the machine, and provided the latter is given proper attention.

Effect on Cows

A machine that is properly adjusted and handled will not injure the cow's teats or udder any more than the average farm hand.

Three years' experience of mechanical milkers on the Central Experimental Farm does not show that the cows dry off any more quickly than when milked by hand.

There is no more, if as much, objection to the milking machine on the part of the cows than there is to hand milking.

Old cows used to hand-milking object most, and may not let down their milk readily, but heifers take to machine milking like ducks to water and reuire hardly any stripping.

Stripping by hand after taking the machine off is advocated by all users, as well as makers, as a precautionary and economical measure.

Effect on Quality of Milk

If the machines are properly handled in the barn, and likewise properly washed in the dairy, the milk produced will be as good, or better, than that produced by hand milking.

Where extra pains are taken with the machines and the care of the milk a very high grade of milk can be produced.

Careless handling results in bad milk and ultimate failure of the machine.

Importance of Efficiency in Operation

Last, and of far more importance than the cost price or make of the machine, comes the question of the efficiency of the operator.

Handling the machine is a job for the farmer, his son, or some hired man who has an interest in the success of the machine and the cows.

For best results the operator must be quick and quiet, with an eye for details.

Know the machine and the cows, and adapt the one to suit the other, giving each their proper share of attention at the proper time.

Makes of Machines

Any of the more prominent makes of milking machines upon the market will do good work provided they are properly handled.

The addresses of the dealers or manufacturers of the various machines can be procured from the farm journals, or upon applicaiton to the Animal Husbandry Division, Experimental Farm, Ottawa.

TRADE MARKS FOR FARM PRODUCTS

Ten years ago a farmer friend of mine invented a new style of hand potato digger and promptly obtained a patent on it from the United States Patent Office, which gave him the exclusive right to manufacture the device for a term of years. Today he could buy up half of the farms in our state if he were so inclined.

Another friend of mine, of a literary turn of mind, wrote a novel and obtained a copyright which gave him the exclusive right to print and publish the book. The other day he showed me a royalty check for $3655.

As for myself, I possess neither inventive, mechanical nor literary genius, but I do claim that the butter which I produce on my dairy farm and sell to "the ultimate consumer" in a do en different states for current coin is second to none, better than 99% of the ordinary product, and that it has established an enviable and gilt-edged reputation with the purchasing public. I have frequently been in retail stores in my own and and neighboring states and heard customers inuire for my "Blue Sky Dairy Butter," and refuse to take anything else.

Then it occurred to me that if my mechanical friend could obtain a patent to protect his invention, and if my literary friend could obtain a copyright to protect the product of his brain, there should be some way whereby a plain farmer could obtain something along the same line which would distinguish his goods from others of the same class, and enable him to reap the benefit of the good will and reputation which he has built up by his honesty, skill and industry.

I found that it was possible to do this by means of a trade-mark, and I lost no time in obtaining a trdae-mark for my "Blue Sky Dairy Butter." For the past five years I have been selling my goods under the protection afforded by my trade-mark, and during that time, and when putting the matter through and getting my trade-mark registered, I picked up some information that might be of interest to other farmers who may be considering how they can protect their name and business reputation of their goods.

First of all, if we start with a definition, a trade-mark may be defined as a "name, sign, symbol or device which is attached to goods offered for sale in the market so as to distinguish them from similar goods and to identify them with some trader, as being made, imported, selected, certified or sold by him," and it followed that its function is to indicate the origin or ownership of the goods, to distinguish the goods of one person from those of another, and to enable the producer or manufacturer to reap a commercial return from the standing of his products.

Having determined to adopt a trade-mark, the very first question which presents itself is: What names, signs, symbols, words or devices may be used as a trade-mark?

In this connection, one of the very first rules is that words which are merely descriptive of the goods or business to which they are applied cannot be used as trade-marks, as such words are common property and cannot be appropriated by one person to the exclusion of the rest of the public. As the courts have said: "No one can secure a monopoly upon the adjectives of the language." Such words as "Superfine," "Best," "First Quality," etc., cannot, therefore, be used as trade-marks.

Following out this rule, the courts have held that descriptive words such as "Club" applied to whiskey, "Self-loading" applied to cartridges, "Oriental Cream" applied to a lotion, "Snow-flake" applied to bread, "Carck Proof" applied to rubber goods, and many others of the same class, cannot be used as trade-marks.

The second rule is that a word, etc., which is used in a purely arbitrary or fanciful sense, as applied to the goods in question may constitute a valid trade-mark.

In this connection, such words as "Sunshine" applied to stoves, "Eureka' applied to fertilizer, "Home" applied to sewing machines, "Hoosier" applied to plows, "La Favorita" applied to flour, "Omega" appiled to oil, "Marvel" applied to flour, "Holeproof" applied to hosiery, and many others of the same class are valid trade-marks.

It will be seen that the trade-mark selected by me—"Blue Sky"—in connection with dairy products, is an arbitrary or fanciful word which fullfils the requirements of the above rule.

In view of the above rules, it follows that numbers of, especially used in combination with letters or other devices ,or when printed in a special form or color, may constitute a valid trade-mark, provided that the numbers are not used to indicate the grade, quality, class or description of the goods, and the same applies to letters or initials. For instance, in an English case the court held that "H. H. 6," where the numeral was used to denote the size of the plow-share ssold, was a valid trade-mark.

The names of characters of fiction or mythology, or of the historical persons or things, are also frequently used as trade-marks, and the courts have held that as long as they are not merely descriptive of the quality of the goods, they constitute valid trade-marks.

For instance, "Delsarte" shoes, "Bismark" collars, "Roger Williams" cloth "Coal Oil Johnny" soap, and many others have been held to be valid trade-marks by the American courts.

It follows also that coined or invented words are peculiarly appropriate and valid for trade-marks, unless merely descriptive, such as "Sapolio," "Usea." "Cuticura" Celluloid," etc.

As a merely descriptive word cannot be used as a trade-mark, it follows that geographical terms and other words used to designate a country or a locality canot be used ofr the same purpose, as these words are common property.

For instance, the words "Orient," "Oriental." "Columbia," etc., cannot be used as trade-marks.

I trust that the foregoing brief paragraphs may give some information worth while and, to my mind, the subject deesrves the attention of any live farmer who is producing and marketing a product that has established a reputation, and who wishes to preserve that reputation for his own financial benefit.—Arthur B. Brown, in Maine Farmer.

"HARD SEEDS" CHIEF CAUSE OF LOW GERMINATION

"Hard seeds" often appear in legumes, particularly in alfalfa and sweet, red, white and alsike clovers. So-called "hard seeds" are those which are still hard at the end of a given germination period. This failure is due to hard seed coats that prevent the absorption of water readily. Some of these seeds will remain in the ground or in the water for an indefinite period without germination, yet if the seed coats are scratched or broken germination is usually repaid. The broken seed coats may result from natural agencies such as freezing and thawing when the seed is sown in late fall.

Ae few of the largest seed companies in the United States make scarifying machines a part of their milling equipment. These machines scratch or break the seed coates and thus reduce the number of "hard seeds." However, sacrification is seldom practiced in that it is a tedious and expensive process and because the demand for scarified seed is limited. The additional cost to the consumer ranges from 10 to 15 per cent. of the original value of the seed.

The percentage of hard seeds remaining in the spring if the seed is sown in the late fall will be relatively small. If the seed sown is of the new crop, the perecntage remaining hard represents a smaller loss than the additional cost of sacrificed seed. It is recommended that buyers of the above-named seeds note carefully the percentage of germination on the container label. If the germination is less than 90 per cent, it will be necessary to increase the amount of seed sown, sa most of the seesd which do not germinate are "hard."

PURE SEED MAKES BIG CROPS

Pure live seed helps to make big crops. Even the most fertile soil, the best seed bed and the most careful cultivation will be useless unless pure, live seeds are planted. It is safe to say that with the same acreage and with the same cultural methods, and with the same care in harvesting, the yields of the crops can be increased 10% to 15% by simply giving unusual attention to the use of pure, clean, sound and vigorous seed. Poor seed is often the only cause of crop failur.e Poor seed is largely responsible for weedy farms. Weed control will be useless unless more attention is given to the use of pure seed.

Freight congestion and delays in transportation make it necessary to place orders weeks in advance of the usual time for all farm supplies. This is particularly true of new parts and repairs for farm machinery. Secure them early and put every tool and implement in condition to use when wanted.

HORTICULTURE

THE HOME VEGETABLE GARDEN

First of a series of articles to appear regularly in these columns on the production of vegetables in the home garden of farm, village, town and city.

By A. G. Turney, Provincial Horticulturist for N. B.

The Need for Greter Home Garden Production

The necessity and importance of the home vegetable garden has never been so urgent or marked as it is now. The food supply must ben increased by every means at our command, and city town and village dwellers, can and must help to swell that increase.

The situation is extremely critical. The civil population of France has exactly three day's supply of food. Italy, if anything, is worse off than France. The British Isles are on rations. Unless the people of the North American Continent put every atom of their strength and resouces into an unparallelled and prodigious effort for the attainment of the uttermost production of which they are capable —unless they do this—and do it now —the civilian population of our allies in Europe faces—famine—disease and death; and our own brave Canadian soldiers and those of the United States must bow to the victorious force of the German arms.

We must increase our production and consumption of wholesale vegetables and eat less of the foodstuffs so urgently needed overseas, such as flour, meats and sugar. Here is the opportunity for the garden owner in city, town or village and on the farm. Vegetables should hold a more important place in our daily food for they have much better food and tonic value than their present consumption, in compjarison to that of other foods, would suggest. Vegetables produced in your own garden, because they will be fresh, should be superior to those from the store or the market. Peas and some other vegetables detoriate rapidly after they are picked. Sweet corn loses much of its sugar contents in a day. The best varieties are not alawys obtainable in the stores or market, because some of them are tender, hard to handle, poor shippers and detiorate rapidly. The superiority of home grown vegetables should lead to a greater consumption of them —with a corresponding saving of the foods needed so much for export. Potatoes, carrots, turnips, onions and beans, especially, may be used to advantage more freely in a variety of wholesome, nourishing and palatable dishes, with a consequent saving of flour, meat and dairy products. Individual and concerted effort towards thiis end is an essential contribution to winning the war.

Starting Long Season Vegetables Indoors

There are same factors, such as Essentials of Gardening, Planning the Garden, Varietiies, Seed Supply, etc.., which, ordinarily, should be considered first. But since some of our readers may desire to prepare for some long season vegetables by starting seed indoors—and that start must be made immediately— we must consider that subject at once—and treat of the others later.

Our average garden will contain comparatively few celery and tomato plants, and early cabbage and cauliflower, and they may be bought from the local florists or growers early in June. However, those who wish to do so, may raise their own plants of vegetables by proceeding as follows:

The seed box or flat, which is kept in the house, is the most practical device for the home gardener to use for this purpose. It should be not deeper than three inches, from 12 to 14 inches wide and about 20 to 24 inshes long. Finan Haddie boxes answer the purpose well. Place a layer of about 1 inch of gravel or cinders in the bottom of the box—and then fill to the top with good garden soil. A finer seed bed may be procured by first passing the soil through a small sieve of about ¼ inch mesh. Press the soil down firmly with a small piece of board. Crosswise of the box, mark shallow drills or furrows, ¼ to ½ inch deep, and 2 inches apart. Sow about 8 seeds to the inch in the row and cover nearly level with the surface pressing the soil slightly with the hand to firm it. Celery seed should not covered more than ⅛ inch. Water a little and set in a warm light place, preferably just inside a sunny window. Give water from time to time, enough to keep the soil moist but not wet, but not enough to leak through the box. If the box is in a window, after the plants are up turn the box each day to prevent them growing in one direction towards the light.

When the plants are 1½ inches high hin out to 2 inches apart in the row. This gives them pace enough to make a strong stocky growth. If you want to keep the plants which are thinned out, set them two inches apart each way in similar boxes or "flats." When the tomato plants are 5 or 6 inches high thin out to 4 or 5 inches apart in theflat. The plants thinned out may be set, one each, in berry boxes. Then when finally planted into the garden, the bottom of the box is cut away and the box sunk in the soil in the permanent location. This gives the plants an excellent start as the soil around the roots is not loosened or disturbed. When the cabbage and cauliflower plants begin to crowd again after first thinning out, thin out and transplant again 3½ to 4 inches apart each way. Leave the celery plants at 2 inches apart. Further directions on the after handling of thee plants will appear later.

For the seed, a packet of each vegetable hould be plenty. The following varieties are recommended: Tomatoes —Alacrity or Early Jewel. Cabbage— Early Express or Jersey Kakefield. Caualiflower — Early Snowball or Dwarf Erfurt. Celery—Golden Self Blanching or Perfected White Plume. Brussels Sprouts (handle same as cabbage) Amager Market. Peppers (handle same as tomatoes) Chinese Giant. Get seeds put up by a well known reliable firm. See that the packets are stamped 1918. Celery seed, particluarly, is practically worthless if more than a year old. Label the rows of seed planted with name of variety and date. Approximate time required for germination: Celery, 10 to 20 days. Cabbage and Cauliflower, 5 to 10 days. Pepper, 9 to 14 days. Tomato, 6 to 12 days.

Essentials for Success

The essentials for successful production of vegetables in the small home garden are the same as those required in larger or market gardening operations, with the important exception, however, that more particular attention must be given to intensive order of planting of the different crops, so as to obtain the maximum yield from the limited area under cultivation.

Soil.—Some special crops, such as celery and melons, require particluar types of soil for the attainment of their highest development. Most vegetables, however may be successfullly

Why Europe Makes Bigger Crops Than the United States

Average Production of European Crops is as Follows:		Average Production of American Crops is as Follows:	
Wheat	33 bushels per acre	Wheat	14 bushels per acre
Oats	45 " "	Oats	40 " "
Potatoes	199.84 " "	Potatoes	97.15 " "
Cotton in Egypt..	400 pounds "	Cotton	185 pounds "

Europe uses a Home-Mixed Nitrate Fertilizer containing 8 per cent of Phosphoric Acid and 4½ per cent of Nitrate Nitrogen.

America uses a Fertilizer containing 8 per cent of Phosphoric Acid and 2 per cent of Nitrogen which is mostly unavailable.

The difference in yields is largely due to larger amount of Nitrate Nitrogen used in Europe per acre as **Nitrate of Soda.** Our small American acre yields are due to failure to appreciate this necessity.

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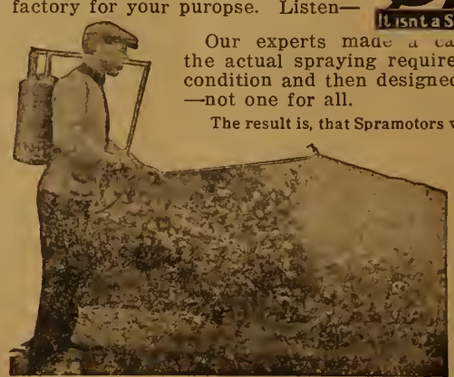

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TORONTO

HAMILTON WINNIPEG

duce earlier crop. A heavy clay soil grown on many different types of soil. It is fortunate that such is the case. for it makes possible the production of vegetables for home use in almost every locality where there is any soil at all suitable for agricultural purposes. Good results may be obtained on any fairly fertile soil. but sandy and clay loams enriched with manure are ideal. Light sand with plenty of manure will give good results and pro- is not desirable because if it is worked when too wet it will bake badly and form clods. Lime at the rate of ¾ to one pound to every ten square feet in the garden will greatly improve such a soil; and also the addition of a heavy dressing of well rotted table manure to be well mixed through the first foot of soil.

Water Supply anl Drainage.—In this province nature has provided sufficient water throughout the growing season to take into solution the plant food of the soil for absorptoin by the fine root hairs of the plants. The problem is not one of irrigation, (although in hot or dry weather water may be applied with considerable benefit), but one of drainage. Good drainage is essential, and after it is assured the more level the ground is the more convenient for working.

Air Drainage.—It should be borne in mind that frost is less likely to injure vegetables growing on high ground than those growing on high places or valleys or cups into which the cold air, which is heavier than warm air, generally settles.

Sunlight.—No amount of fertilizer watering or cultivation will take the place of sunlight. In planning the garden this factor must be recognized and consideration given to the time per day that any part of the garden is shadowed by fences, buildings, trees anad shrubs. To be successful most of the garden must receive a daily average of, at least, five hours of sunlight. Foilage crops, such as Lettuce, and Spinach, will stand more shadow. but even these require from two to three hours of sunshine per day. Such plants as the tomato and pepper and those which have fruits to ripen should be placed in the sunniest spots.

With many small home gardens there is little or no opportunity for choosing location and exposure, the exact position of the garden being already determined by the restriction of buildings, size of lot, etc. In such a case the owner must plan to make the best use of its adaptations by tudying them in their relation to the requirements of the different crops, and growing onl those which offer the best chance of success. There, however, a certain amount of choice may be exercised, the location and exposure of the garden hould be based on the factors dealt with above.

Cultivation.—Good cultivation is essential to success, and it will be dealt with in subsequent articles on the preparation of the soil and cultural direction for each crop.

Good Seed of Right Varieties.—Seed should be ordered or obtained well in advance of the actual dates for sowing. One is more likely to get good seed by ordering early. Some seeds lose their vitality after a year or two, and old seed as a rule should not be relied on. Buy seeds put up by a reliable seed house and see that all packets of seed are stamped 1918, and that seeds bought in larger quantities are of 1917 production. Do not put your faith in new varieties for which great things are so attractively claimed by some seed firms—but select a varieties recommended by local growers becuse of their proved worth and suitability for local conditions.

Planning the Garden

There are three types of home vegetable garden: (1) The farmer's garden, (2) th evillage, small town or surburban garden, (3) the city garden.

There is generally plenty of land available for the farmer's garden and hence no restriction on the assortment of vegetables or the space to be alloted to them. Planting should be made in long rows with ample space between them so that horse cultivation may be used as much as possible. In the farmers' garden the main point is to reduce the hand labor to a minimum, for labor is more expensive to the farmer than space. For the present we will have to leave a further consideration of the farmers' garden and considerable problems of the smaller gardens.

The village or surburban garden often presents conditions very diifferent from those of the farm. The space is more limited so that the vegetablse must be planted closer together and all cultivation done by hand, and it is often adivsable to omit certain vegetables that require a large amount of space.

The backyard of the city calls for more extensive methods and usually presents greater difficulties. However, limitations of space, and poorness of soil, may be offset to some extent by the availibilty of water and opportunity for improving the soil by addition of lime and manure.

In orIder to obtain the best results every foot of our small garden should be kept constantly in crop, if possible. This may only be accomplished by making a definite plan of the garden some weeks before spring opens. By laying out the garden on paper in this way much time will be saved, mistakes will be avoided, and better all round results may be secured. Make the plan on strong paper that will stand frequent handling and use outdoors. Draw it on a fairly large scale, inch to 4 ft. is suggested, so as to leave room for notes and dates of planting for each crop.

The following points should be considered in deciding on the position of each crop in the garden. These points are applicable to all three types of gardens, paritcularly to the small one.

Permanent or perennial plants, such as Asparagus, Rhubarb and small fruits, should be located along one side or end. Small plants such as beets, carrots, lettuce, parsnips, etc., which need much the same treatment and only small spaces between the drills, should be grouped in adjacent rows. If the vegetables are grouped in this manner according to their cultural requirements, then each group may be planted and tended as one crop and the operations will be much simplified. Tall growing plents giving

(Continued on page 366)

BRUCE'S SEEDS

JOHN A. BRUCE & CO. LIMITED — REGAL TRADE MARK SEEDS — HAMILTON

WE OFFER

		Per Bushel
Red Clover		
No. 1.	Govt. Standard	$25.00
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RENNIE'S SEEDS For Better Gardens

"EVERY back yard should be used for the cultivation of fruits and vegetables"—says the Food Controller's Bulletin. Market Gardens must be worked to capacity. But all this effort is wasted unless the seeds sown are capable of producing sturdy, vigorous plants. Plant Rennie's War Garden Seeds and insure a full crop!

For Planting Mar. 1st to Apr. 15th Order NOW!

	pkt.	¼ oz.	½ oz.	oz.	¼ lb
Cabbage Danish Summer Roundhead	.10	....	....	0.90	2.75
Cauliflower Rennie's Danish Drouth-Resisting	.15 & .25	1.00	1.85	3.50	10.00
Celery Paris Golden Yellow (Extra Select)	.15	.60	1.10	2.00	
Onion	pkt.	oz.	¼ lb.	lb.	
Rennie's Extra Early Red	.05	.35	1.00	3.75	
Radish—Cooper's Sparkler	.05	.20	.65	2.20	
Tomato—Market King	.10	.60	1.75		
Rennie's Improved Beefsteak	.10	.75	2.50		
					pkt.
Pansy—Rennie's XXX Exhibition Mixture					.25
Sweet Peas—Rennie's XXX Spencer Mixture					.15
Nasturtium—Rennie's XXX Chameleon Mixture					.10
Stocks—Rennie's XXX Large Flowering Globe Mixture					.20

LOOK FOR THE STARS

Our 1918 Catalogue should be in your hand by now. It is your patriotic duty to consult it at every opportunity. Our Government insists we must produce more. Start right, then, and be sure and sow good seed—RENNIE'S SEEDS. Look for the special star border bargains in our Catalogue—it will pay you to do so.

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They're Growing Fine!

From Spring to Fall you'll hear this expression used over and over again, with ever-increasing satisfaction, by gardeners who have planted Ewing's Seeds.

The splendid promise of the first few weeks, marked by good germination and lusty growth, is more than fulfilled as the season advances—for

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are "thoroughbreds." They come from choice selected plants, and reproduce the same.

Don't take chances—get Ewing's Seeds—the kind that for nearly half a century have been producing bumper crops. Write for our new Illustrated Catalogue, and if your Dealer hasn't Ewing's Seeds, order from us direct.

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Ewing's superb blend of mixed Giant Spencer Sweet Peas

Composed exclusively of Giant Waved Spencer varieties, blended in proper proportions of bright colors and including several new hybrids of exquisite shades, many of which, when sufficiently trued up will be introduced as new named varieties. Pkt. 10c; oz. 35c; ¼ lb. $1.00; 1 lb. $3.35. Sent postage paid—Cash with order. 54

DAIRYING.

MILK RETURNS FROM A SHORTHORN HERD

The production of the registered Shorthorn Herd at the Experimental Station, Kentville, N. S., as set forth in the following table, would indicate that profitable returns may be had from such stock for dairy purposes. The aim has been to breed the cows as early as possible after freshening, having in view the getting of a calf every year, but this is impossible because of some cows failing to breed early, due principally to a faulty sire. The dry period has averaged 74 days, the cows milking 304 days and making 378 days between calving.

In the case of Louisa May 2nd, it has been impossible to keep her milking more than six months. It will be noticed she is a good producer when milking, but her long dry period has made her unprofitable. Burnbrae Fairy, on the other hand, is a persistent milker but low producer, turning slight profit only. Outside of these two cows, the herd, for 24 lactation periods gave a profit of $41.75 for each.

HERD RECORD FOR LACTATION PERIOD COMPLETED

NAME	No. of days dry	No. of days milking	Total yield of milk	Average milk per day	Pounds butter produced	Value of butter and skim milk	Cost of feed from calving to calving	Profit
Average From Cows Completing Four Lactation Periods								
Meadow Princess	69	334	6139	18	323	125.75	79.04	46.71
Meadow Blossom	67	291	5136	17	246	98.82	68.66	30.16
Burnbrae Fairy	57	293	3559	12	178	68.63	59.60	9.06
Louisa May 2nd	161	181	3203	18	140	55.17	60.19	5.02
Average From Cows Completing Three Lactation Periods								
Hillview Victoria	101	265	6752	25	314	116.00	79.20	36.80
Meadow Maid	92	348	6364	18	307	115.46	87.94	27.52
Average From Cows Completing Two Lactation Periods								
Hedgyn Susan	35	320	8120	25	391	171.15	92.51	75.64
Meadow Flower 24th	66	321	8023	25	354	158.27	101.16	57.11
Average From Cows Completing One Lactation Period								
Stamford Countess 10th	65	280	7053	25	333	113.60	66.88	46.72
Average From Heifers Completing Two Lactation Periods								
Kentville Jessamine	45	293	4869	17	226	98.54	68.29	30.25
Average From Heifers Completing Their First Lactation Period								
Kentville Princess	50	333	5293	16	286	115.38	71.68	43.70
Kentville Maid	56	324	4519	14	223	101.55	64.49	37.06
Lady Roberts	100	375	4132	11	214	97.24	69.70	27.54
Average for 32 lacation periods	74	304	5627	18½	272	110.42	74.79	35.63

As the stock is all sold or kept for breeding purposes, it is thought that their value and the manure more than often offsets the cost of labor. The cows are charged for all food consumed between periods of calving.

The value of the butter is based on the wholesale price of butter sold by the Acadia Dairy Company. The value of the skim milk ranged from 20 to 30 cents per hundred. Much of the milk and cream sold for household use, and, if figured on that basis, the profits would be considerably greater.

The meal ration in 1913 was made up of 400 pounds bran, 200 pounds crushed oats, 100 lbs. cottonseed meal, 100 pounds oilcake meal and 100 pounds cornmeal. In 1914, 400 pounds bran, 200 pounds crushed oats, 150 pounds cottonseed meal, 100 pounds ailcake meal and 150 pounds middlings. In 1915, 400 younds bran, 400 pounds crushed oats, 200 pounds cottonseed meal and 200 pounds oilcake meal, and the same in 1916 and 1917. The practice has been to feed the meal raiton according to quantity of milk produced, using one pound to from 3 to 4 pounds of milk, which is considered good dairy practice. The pasturage is poor and one pound is allowed during part of the summer to each 4 pounds of milk produced. During winter 1 pound is given to each 3 pounds of milk. The succulent feed is either ensilage or roots and averages 50 pounds per day. The hay fed amounts to 12 pounds per day. The cost of feed for the whole period stated above has averaged 20 cents per day. The average cost per day at present prices is approximately 30 cents.

These shorthorns are of Scotch foundation blood, eslected as representing a good type of farmer's shorthorns, showing indications of fair milk production, combined with good beef conformation. Visitors invariably express the opinion that the cows are too fat to give milk. The fact is that if fed according to the usual dairy standard they will continue fat, and the reason why so many shorthorns tare poor producers may, in part, be because they have not been fed to their requirements for milk production.

MILKING MACHINES ARE EASIER ON COWS THAN THE AVERAGE HAND MILKER

When any new invention comes up the general tendency is to look upon it with suspicion and regard it as being not quite so good as the old method. For years I was so inclined with the milking machine, and being more or less of a crank on clean hand milking, I hesitated about getting enthusiastic over mechanical milkinig. So many of my dairy friends, however, reported good results from their machines that I finally installed an outfit for milking my cows by machinery.

While I am not so enthused as some appear to be I have no occasion to regret the investment. It does the work when properly handled and does a better job of milking than does the average hired man. It saves considerable time, solves the labor problem in a large measure and I believe is a profitable investment.

My outfit consists of three units which milks three cows at a time. One man can keep it going and strip at the same time, but it is better to have two men—one to strip and one to change the machines. In the busy season when the men are needed in the field one man looks after the milking and other chores.

An objectionable feature of milking machines is that they do not milk all the cows completely dry. They milk some of the cows as dry as one can do by hand, while with others they leave a quart or more. The after-stripping is done quickly, however, and can be arranged to come between changes of a unit from one cow to another. The stripping might be a good thing, because it keeps one in close touch with the conditions of the udders, which otherwise might be overlooked if one did not have to work with them. A congestion is caught in time often can be prevented, and hand stripping after the machine is about the only way to detect an irregularity.

One has much to learn after buying a milking machine, in which respect it is something ilke your first experience with the automobile. Until the little details of runnning a car are mastered one is apt to be pretty much disgusted with it, but after you are

Don't Sell Your Cows

THE increasing shortage of hired men is forcing many farmers to seriously consider selling their herds as they cannot get the time nor labor to milk them.

To sell now is similar to "killing the goose that laid the golden egg"—for never in the history of farming have the prices of milk and cream been higher, nor the necessity of their production so vital to the Empire's needs.

Your herd is a source of rapid growth in your yearly income—a source of rapid increase in productive value of your land itself. Why cut off that income and increased productivity, when you can save it and get better results from your cows?

EMPIRE MILKING MACHINES

have solved the problem of saving time and labor in milking—and have freed the hired man for work in the fields.

Mr. J. H. Grisdale, B. Agr., Director of Dominion Experimental Farm says: The real drudgery of the dairy farm is eliminated by the use of the milking machine. ONE man with a milking machine can do the work of three hand milkers in the same length of time. They take the place of the extra hired men so hard to obtain at this time and are recognized as a good investment.

The most exacting tests by Experimental Farms and Stations prove that Empire Machines milk without injury to the cow, with speed, ease, economy and thoroughness. Cows and heifers take readily to being milked by an Empire Milking Machine and benefit by it. An Empire will save money for you in labor and soon pays for itself. Space prohibits giving full information about this labor saver; Our booklets, however, have the whole story and valuable testimonials from other dairymen just like yourself. Write us for them.

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TORONTO MONTREAL

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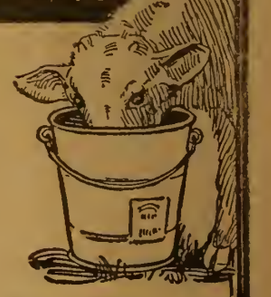
The Feed for Hungry Calves



Conserve the milk and help the nation. You do not need to feed milk to your calves if you use Royal Purple Calf Meal. It is a perfect substitute for milk. It is partially cooked, and the pure ingredients are so combined that the meal will not injure or derange the digestive organs of even the youngest calf. If you want rapid development and healthy calves, feed

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John D. Hamilton, Port Hope, Ont., writes:
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S. M. Osborne, Maxwell, Ont., writes:
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THE CANADIAN SALT CO. LIMITED 224

familiar with its ins and outs you would not do without it. Likewise it requires some time and patience ti get accustomed to the milking machine. Experience is the only guide in choosing the proper size teat cups for certain cows and in getting them on so they will stay. It is impracticable to try to milk some cows with the milking machine on account of the shape of their teats. With such cows, unless there is some especially good reason for keeping them, I have found the best policy is to sell them to some one who milks by hand. In buying cows one also must keep in mind whether the teatts are adapted to machine milking.

Cows Do Not Object

I have yet to find the cow which objects to the milking machine. It is easier to them than is hand milking. I have one heifer in particular which kicks when milked by hand. With the machine attached she is as gentle as any cow in the stable. She happens to be one of the few which the machine milks completely dry, a fact which I and those who have tried to milk her by hand surely appreciate. Cows do not seem to make any fuss about machine milking even at the start. The only time they seem inclined to stey around or kick is when the cups are left on too long. For this reason one has to keep pretty close tab on each unit and familiariize himself with the approximate time required to milk each cow. I have found a few cows which would not give their milk down even though the cups be left on 15 or 20 minutes. Such cows had better be sold unless they are especially heavy producers.

My observation has been that a cow milked by machinery will give as much milk in lactation period as if milked by hand. Some claim the average cow milked by the average man will produce more milk with the machine for the simple reason that you are apt to get it all in more complete strippings after the machine. The average milker is inclined to leave the last pnt ior quart in the udder if he milks a cow by hand. The machine gets what he ordinarily does and when he strips he gets what he otherwise would leave in the udder. I belive if it were possible to keep exact records under similar cnoditions that the machine-milked cow would have the best of the argument.

Machine milking is a sanitary process if the cups and rubber parts are kept clean. The milk is not exposed to stable dust, but goes direct through a rubber tube into a covered pail from the teat. The only chance for stable dirt getting into the milk is when the teat cups drop off and praticles of diirt from the floor are sucked into the pail. The milking machine parts are very casily kept clean. The tinware is washed in the same manner as the separator and regular dairy apparatus. The rubber parts are first washed in warm water containing an alkali washing soda and then kept immersed in a crock or other container full of a special disinfecting solution recommended by the milking machine company. With this preparation one should have no trouble with sour milk even in the hottest weather. Unless properly cared for however, the teat cups and connecting tubes will become foul and cause trouble.

For some reason hard to explain most hired men object to milking and I have found that the milking machine eliminates much of this objection. Those who do not like to milk by hand often have no objection at all to using the machine. This is especially true in hot weather when the flies are bad. With the machine one can milk almost any number of cows without becoming fatigued. With two men handling a three-unit machine very little time would be saved over hand milking, but with one man operating it he would milk as rapidly as could two men by hand. In the busy season this saving of a hand for the field is no small consideration in favor of the milking machine.

It seems to me that the milking machine can do its part in the conservation of labor during the next year or two of war times. Many of the farm boys will be called to the front and ways must be studied out to do as much o more than was done before with them. In the field labor-saving machinery enabling one man to do the work of two or three will help solve the problem and in the barn the milking machine can bring about the same results. They have passer the experimental stage and there is too much evidence both from agricultural colleges and practical dairymen in their favor to doubt their practicability. A milking machine will save labor and pay fro itself while it is doing it—W. J. Lawrence in O. V. J.

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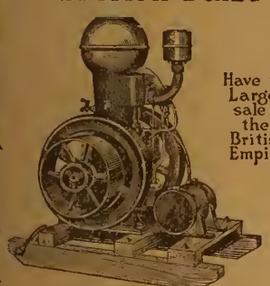
The name that stands for Quality in Farm Machinery

LISTER ENGINES ARE BRITISH BUILT



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R.A. LISTER & CO., LIMITED TORONTO, ONT.

Save Butter-Fat, Time and Labor for Yourself and for the Empire with a

NEW DE LAVAL CREAM SEPARATOR

Save for Yourself Butter-fat right now is selling at the highest price in many years and you can't afford to waste an ounce of it.

Whether you are trying to get along without any cream separator or using an inferior or half-worn-out machine, you are losing valuable butter-fat that would soon pay for a New De Laval.

The De Laval is not only a cream saver but a time and labor saver, and with the present shortage of farm help every farmer needs to utilize time and labor saving machinery wherever it is possible to do so.

Save for the Empire It is the patriotic duty of every cow owner to save butter-fat. We are a nation at war, and not a particle of fat should be wasted. When all Europeana countries are encouraging the use of the best cream separator, can we do less?

Buy Your DeLaval Now Railway delays are so serious that deliveries can't be depended upon, and if you don't order your De Laval early there is no telling when you can get it. Then, too, labor and material conditions may compel higher prices. The sooner you get a De Laval saving butter-fat and labor for yourself and the Empire, the sooner will it pay for itself.

If you haven't the spare cash right now, that need not stand in the way of your getting a New De Laval at once. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several installments so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.

Why not see the nearest DeLaval agent at once? If you do not know him, write to the nearest office for new catalog or any desired information.

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous DeLaval CreamSeparators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butterworkers. Cataloghes of any of our lines mailed upon request.

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LIVE STOCK.

SUNLIGHT IN HOG HOUSES

In planning a hog house it is well to bear in mind the natural habits of pigs as they run wild and to give the animals every opportunity to live naturally. The wild hog lives where he can find shade in summer, a dry place to sleep and open fields for grazing. He is a healthy animal.

A warm, dry nest is one thing he is particular about This idea should be copied in building hog houses for domesticated animals, if we are to have conditions as nearly natural as possibile and retain in our hogs the vigor and health of the wild animals.

In having warm, dry pens an abundance of sunlight is of first importance. Let sunshine fall on the floor, dampness is dried off and warmth brought where the hog is. The hog lives directly on the floor—he cannot be up where the warm air in the pen rises. We all know that in a room otherwise warm our feet may be cold—the layer of air on the bottom is not warm. It is in the lower layer of air in the pen that the pig lives, and the more sunlight striking there, the better off is the pig. Have you ever noticed on cold days how the house cat lies on the sunny side of the floor, and how she moves along to keep in it as it moves? Sunlight furnishres much warmth, especially where it strikes direct.

Keep Pens Dry

Sunlight helps not only in keeping a pen warm but in keeping it dry. Dampness and hogs do not go well together. It is better to have a pen cold, provided it is dry and there are no drafts, than to have it warm and wet. In fact, a high degree of warmth is not necessary in a hog pen, except at the time a sow is farrowing—and then it should not be hot. But dryness is essential at all times. If plenty of sunlight can get in it will help greatly in keeping pens dry.

A Good Disinfectant

Sunlight is a disinfectant, one of the best. It is death to disease germs. Commercial disinfectants are good, but do not overlook the value of sunlight for the same purpose. It is just as good an investment to spend money for window glass in a hog house as it is to spend it for dip, considering only the cleansing of the pens of disease germs. And in addition, sunshine does many things which disinfectants cannot do. Use them for their purpose—but use the sunlight, too.

The sun gives vitality to the growing pigs. A few hours in the sunshine tones up a litter as nothing else cana, for it is a source of life, an essential to health.

Plenty of windows in the hog house are a necessity. Hogs seek the sunshine instinctively, except on hot days. To deprive them of it means loss o their owner.

LOVER OF GOOD LIVE STOCK STUDIES NEED OF ANIMALS

Among our agricultural pursuits dairying holds first place from the standpoint of the necessity for a broad scientfic agricultural education. It also ranks high as a remunerative industry when conducted on business principles and with the proper class of cows.

Of the different branches of agriculture dairying is best cauculated to keep up the fertility of the soil, to bring in the most continuous and least variable remuneration, to give steady employment the year around, to stimulate and develop a deep and intellectual investigation in one's work, to till the soil skilfully, select carefully the best varieties of seed, to watch the growth of plants, harvest crops safely, to breed and rear the calves, to have these young animals develop into fine heifers and later into into splendid milking cows, to study their needs, to combine the home grown fooder with the more concentrated bought feeds so as to obtain the best results, and to delve into the mystery of how the cow cna take this food and manufacture the same into creamy white, life-giving milk.

Is not my contention true that a man who successfully carires on a dairy farm is on the top rung of the ladder of agricultural achievement? The man who is a lover of good stock and studies the needs of his animals is ever the man who succeeds.

There is on use entering the dairy business unless there is a natural liking for the cow, and a keen desire to help her do her best. After all much depends upon the man. It pays in more than one way to be on friendly terms with the heifer. You must pet and talk to her, so as to gain her confidence and affection.

Place her early with the herd of milk cows and watch that no harm befalls her. A sudden fright from a dog or an unusual sight may cause her to lose her calf. Go through the process of milking her to accustom her to being handled. See that the calf is removed unknown to her twenty-four hours after birth. Go into the stall soon after the calf is taken away and groom her and if she gets the idea that your are her baby so much the better for the milk pail.

The heifer's udder is swollen and inflamed for a few days after calving. She is nervous and exicted. If you have been in ithe habit of handling her she will will allow you to gently rub her udder and draw a little milk. The relief thus given will further install you in her affections, and her last thought would be to lift a foot to kick you.

The kicking cow is not born, she is made that way by her milker. To get gentle cows there is nothing like raising them yourself. The cow seems to acquire the diposition of her keeper. No dairyman can afford to have a man in his stable who is rough and quick tempered.

If the heifer is thrifty and strong she may have her first calf from two to two and a half years old. If delayed longer she is apt to acquire the habit of putting her food into flesh.

If you wish to establish a long milking propensity you must be careful when milking after the first calf. It is then that the habit of a long or short milking period is formed. Dry her up at seven or eight months and it is difficult ever after to get her to milk for ten months. For this reason keep on milking her for ten or eleven months no matter how little milk you may get.

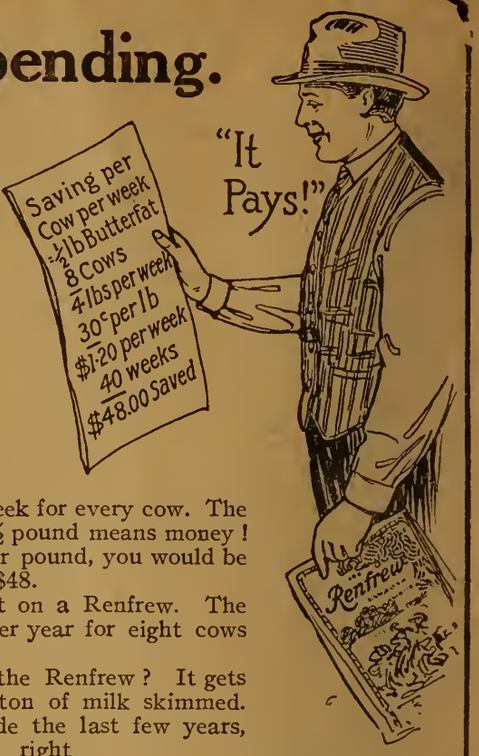
It is better to have the heavy flow of milk in winter, when prices are higher and help more plentiful. Cows in November and December g on grass just when there is a tendency to a falling off in the milk flow. The change to fresh pasture stimulates the scretion of milk and it is like a second freshening.

Fall calving is better for the cow and the calf. They receive better care and are not so exposed to extremes of weather.

It must be remembered that a cow must not be neglected when dry. That is he rbuilding up period, and she should get plenty of good food and be in a vigorous condition at freshening time.

Saving Money by Spending.

"SAVING" money by continuing to use an inferior machine is like "saving at the spigot and wasting at the bung." For instance, if your machine skims down to .1 per cent. for every thousand pounds of milk skimmed, compare that result with the splendid, proven record of the Renfrew. You find by having the

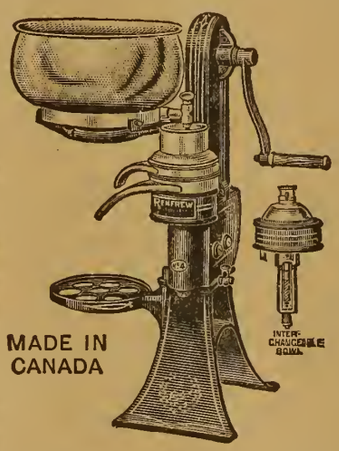


Renfrew

that you will save about ½ pound of butter-fat per week for every cow. The Renfrew skims down to .01 per cent. That loss of ½ pound means money! With eight cows, and butter-fat at say 30 cents per pound, you would be losing every year (40 weeks' milking) the tidy sum of $48.

This sum saved is accepted by us as a first payment on a Renfrew. The saving soon pays for the machine—and then the $48 per year for eight cows becomes extra profit.

Will it not pay you to discard the old machine for the Renfrew? It gets all but the last three ounces of butter-fat in a whole ton of milk skimmed. If you could reckon the losses the old machine made the last few years, wouldn't it decide you right away to get the close-skimming Renfrew?



Our illustrated booklet gives interesting proofs of the Renfrew's close skimming, including tests by Government Dairy Schools. It also explains the Renfrew's self-oiling system, the interchangeable capacity feature, easy-to-clean advantages, etc. Send for booklet to-day.

Other Lines: **Renfrew Kerosene Engine, Happy Farmer Tractors, Farmers' 2000 lb. Truck Scale.**

NOTICE.—The Renfrew Separator illustrated here was formerly sold under the name "Standard," which identified it as a high efficiency cream separator. The name "Renfrew" has been used on the same machine for several years for our United States and foreign trade and under that name has become as popular in those markets as under the name "Standard" in Canada. Now the name "Renfrew" has been adopted for Canada so as to link the name more closely with that of our company and so that we can sell the machine under a uniform name throughout the world.

The Renfrew Machinery Co., Limited

Head Office and Works: Renfrew, Ontario

Eastern Branch: Sussex, N.B. U.S.A. Branch: Milwaukee, Wis.

Agencies almost everywhere in Canada 12

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Who wish to keep their horses and cattle strong and healthy, should always have on hand a supply of

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The Canadian medicinal stock food for Horses, Cattle, Sheep, Hogs and Poultry.

It will help to economize on feed and owing to its sovereign tonic and curative virtues will keep the stock strong, healthy and free from many ailments.

Order from your dealer. If he hasn't it in hand, he will be pleased to obtain it for you.

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First of all there is a clear saving of at least 25% in time and money, compared with lumber and sheathing paper.

(A good many farmers have proved this. We'll send you their names and addresses if you wish—and you can write them),

WARM AND DRY

Bishopric Stucco Board makes a warmer and dryer barn than you can possibly get with ordinary boards. Because it is made of asphalt mastic, reinforced with kiln-dried laths. This gives a surface absolutely proof against wind and dampness, rats and vermin.

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Bishopric Stucco Board makes the ideal Barn, Stable, Poultry House and Grain Storage. It costs less, gives better service, and is so much easier to put up.

Write for our booklet, describing it in detail, with many illustrations showing Bishopric Products in actual use.

BISHOPRIC WALL BOARD CO.
LIMITED
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88

Children or weak handed persons should never milk good cows. They have not the strength in their hands to press the teats hard enough to excite the nerves sufficiently to get all the milk. Poor milkers the too often the cause of the cows not filling the pail as the yshrould.

Did you ever think why the calf beats its mother while getting its milk? The milk was not coming fast enough to suit the little animal and instinct t aught it that by giving a bunt or two the nerves were excited and milk came quicker.

Some milkers may take a lesson from the calf and instead of trying to get the udder as well as the milk into the pail let them press upward instead of pulling downward so hard. The udder is less likely to become injured or unshapely. If either the fore or back portion of the udder is poorly developed, milk that part first in the hope of stimulating the nerves and overcoming to some extent the deficiency.

Alwaas milk the cows in the same order. If you milk Spotty first tonight go to her first next morning. She may get cranky and hold up her milk if you pass her and go to Maffie.

Milk as nearly as you can at the same hour, having equal distances of time between milkings. Cows get accustomed to a milker and it is better for the same person to milk the same cows. Some cows are so particular in this respect that they refuse to give their milk to a stranger. Milking should b edone quietly and vigorously throughout the entire process.

There is no more effectual way of drying up a cow than leaving a little milk in her udder; besides it pays to get it all, for the last drawn milk contains as high as from ten to twelve per cent. fat while the first only about two per cent.

The day has forever passed when th eprogressive dairyman allows his cows to be brought running in the stable by a dog or a boy with a whip. Harsh treatment. chilly winds, cold rains, worrying flies, in fact anything that excltes, irritates, or brings discomfort to the cow decreases very materailly her proltableness. A cow should soon learn that her keeper is her best friend. Speak to her in a kind voice and pet her. If you are milking her and she steps on your foot d onot give her a knock. She did not know just where your foot was or how big it was.

Learn to govern your temper; it will bring dollars into your pocketbook. If you abuse a cow she will get even with you. You say the ugly old thing is holding up her milk but how often is it the case that you were ill-natured? It is not well to let the cow form the habit of eating while being milked. If they become accustomed to being fed at that time they will not let their milk down as well if the food is withheld. But even if from the first they are milked before the feeding, they do as well, and it is better for the milk, as there is less food odor and less dust in the stable.

Exposure on cold days or nights results in a decreased milk flow and general lack of thrift showing by the starin coat and a poorly nourished calf. Cows must be kept comfortable at all times. Lying on the cold wet ground is certainly injurious to the highly developed mammary organs, which are very sensitive to the weather canges.

Remember to take good care of the cow and your bank acocunt will grow. Good, better, best, and let us have no rest until the good has been made better, and the better made best.

AYRSHIRE CATTLE

are profitable cattle

Write for Booklet

"EVERY FARM SHOULD HAVE AN AYRSHIRE"

W. F. STEPHEN, Secretary
Canadian Ayrshire Breeders' Association
Box 504 Huntington, Que

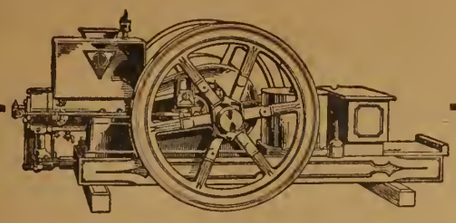
KEEPING BREEDING RECORDS ON FARM

The job of keeping breeding records is one that most of us farmers find trying. The simplest and most efficient method is trouble enough. A system that the writer finds very convenient is to use a desk calendar or a memorandum file as they are sometimes called, like a city business man uses to remind him of his appointments. The date of breeding can be set down on the day bred. Then all that is necessary is to add the number of days in the gestation period of the animal to the number of the day, the year of the day bred, and the sum obtained will be the number of the day of the year on which the gestation period should end. For example, a sow is bred n January 3. The number of days in the gestation period ofa sow is 112. January 3 is the third day of the year. Add 112 to three and we have 115. Turn the leaves of the calendar to 115 and we find the 115th day falls on April 25. That is the date the new born pigs should arrive.

It is a good plan to indicate on a page of the calendar a week or ten days previous the fact that such and such an animal should be expecting a birthday party in so many days. Then when this warning page comes up your attnetion will be called to the fact and preparation can be made in time. Your presence in the hog house at the proper time may help to save several piglets that might get lost and chilled or crusbed heneath the sow.

A calendar like the one mentioned can be procured from any city station-er if they are not to be had in your country town. One should be sure that the calendar has the number of the day ol the year on each page. I

(Continued on page 366)



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IT'S the same with cheap farm engines as with cheap farm help. You can buy a poorly designed, cheaply made engine for less than the price of an Alpha, but you will find that a cheap engine is always "balking" or getting out of kilter just when you need it most.

And there will be endless expense for repairs.

You will practice real economy by buying an

ALPHA GAS ENGINE

which runs along, day after day, without giving you any trouble. You can always depend on the Alpha.

In the Alpha there are none of the trouble-making contrivances that render so many "farm" engines impracticable. It contains no delicate electric batteries, but runs on a simple, low-speed magneto, guaranteed for the life of the engine.

Alpha Gas Engines are made in twelve sizes, 1½ to 28 H. P., and each size is furnished in stationary, semi-portable or portable style, with hopper or tank-cooled cylinder. Write or call up the nearest Alpha selling agency today, or if you don't know who they are, write us direct.

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ROYAL PURPLE
Stock Specific
This popular animal regulator and fattener is being fed to stock in thousands of stables every day during the winter. It is good for cows, steers, horses, sheep and swine. It tones up the entire system by improving digestion, and purifying the blood. Maximum nourishment is obtained from all food eaten when our Stock Specific is fed regularly.
Cows Give More Milk
Dairymen state positively that their cows give from one-quarter to a half gallon more milk each, daily, when fed Royal Purple Stock Specific. Think how you would benefit by its use if milking only a small herd.
It rapidly improves the condition of hide-bound horses, and enables you to fatten hogs in from three to five weeks less time than you would otherwise require. Give it a trial.
Feedmen everywhere carry it in large and small packages. Ask for our 80-page booklet.
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Caustic Balsam

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A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Diphtheria, Sore Lungs, Rheumatism and all Stiff Joints

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER

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The LAWRENCE-WILLIAMS COMPANY, Toronto, Can.

ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.

Reduces Strained, Puffy Ankles, Lymphangitis, Poll Evil, Fistula, Boils, Swellings; Stops Lameness and allays pain. Heals Sores, Cuts, Bruises, Boot Chafes. It is an

ANTISEPTIC AND GERMICIDE

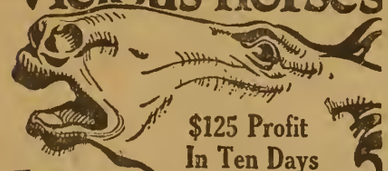
[NON-POISONOUS]

Does not blister or remove the hair and horse can be worked. Pleasant to use. $2.00 a bottle, delivered. Describe your case for special instructions and Book 5 K free. ABSORBINE, JR., antiseptic liniment for mankind reduces Strains, Painful, Knotted, Swollen Veins, Milk Leg, Gout. Concentrated—only a few drops required at an application. Price $1 per bottle at dealers or delivered.

W. F. YOUNG, P.D.F. 124 Lymans Bldg., Montreal, Can.

Absorbine and Absorbine, Jr., are made in Canada

Big Money in Vicious Horses



$125 Profit In Ten Days

Free Book

Write for it

C. H. MACKLEY of Unadilla, New York, picked up a vicious mare for $50 and after 10 days handling by my method sold her for $175. S. L. Arrant bought a "mean one" for $35 and after a few hours' training sold the horse for $135. Dell Nicholson got a biting, kicking mare at $35 and by my methods made her worth $200. D. L. Smith changed a worthless, dangerous balker into a $225 horse. Everett McBlock broke in a pony for the owner, taught it a few tricks and got $70 for his few hours' work. That is how my students are making big money. So can you!

Master Any Horse

I will teach you by mail my famous method of breaking colts and training horses. I will teach you how to overcome every bad habit a horse can have. I will teach you how to read a horse's disposition at a glance; how to make big money as an expert horseman.

FREE BOOK My free book will open your eyes. Reveals valuable horse training secrets. Explains my wonderful system. Write for this book today. Send a postal—NOW, before you forget.

Dept. 703 A PROF. JESSE BEERY Pleasant Hill, Ohio

We have been using MINARD'S LINIMENT in our home for a number of years and use no other Liniment but MINARD'S, and we can recommend it highly for sprains, bruises, pains or tightness of the chest, soreness of the throat, headache or anything of that sort. We will not be without it one single day, for we get a new bottle before the other is all used. I can recommend it highly to anyone.

JOHN WAKEFIELD.
La Have Islands, Lunenburg Co., N.S.

THE HORSE

LACK OF HOOF CARE IN THE WINTER MAKES THOUSANDS OF COLTS GOOD FOR NOTHING

The foot of the horse is one of the most important regions of study, and one of the most important parts of his anatomy that require special attention during the winter months. "A man is as old as his arteries and a horse as old as his feet and legs." Winter neglect of the young colt's hoof reduces his value, and takes years off his life. In some cases a colt is practically ruined for life for want of intelligent attention to its feet during the first winter.

When running with its dam, the wear of the wall of the hoof at the bottom is about equal to the growth at the top, hence the feet remain the same size and shape. But when brought into the stable for winter, the wear becomes much less than the growth. Hence the feet become deep at the heels, and long at the toes. The walls of the heel, after having grown downward below the frog, have a tendency to bend or curl inwards, the bars not being sufficiently strong to prevent it.

The Hoof of the Foal

The care of the foot should begin with the foal. There are many farmers who consider that the foot of the youngster can look after itself, and they give it no attention until the animal is harnessed at three years of age. No greater mistake can be made in rearing horses. It is during these three years that it is possible to cultivate a good foot, and to correct errors in conformation of the limbs, and not afterwards. The unshod foot should be trimmed every month. The heels of the young colts have a tendency to curl inwards, and if left alone may produce contracted foot. The chief object is to get them to spring, and to slope nicely outwards. Early trimming will bring about what is desired. The heels especially should be reduced until the bars and frog are pressing on the ground. The toe has a tendency to grow too long, thus throwing too much stress on the back tendons. It must be shortened, but not as much as to produce a stumpy appearance in the foot. The colt's foot should be trimmen in this way every month, and it must be remembered that it is absolutely prohibitive to cut the sole, frog or bars. This is all the attention that is necessary for the fullest development of a good foot, in an animal with limbs straight and well formed and moves straight and close.

Cultivating Its Weight Carrying Parts Equally

Unfortunately many foals are born with limbs far from being straight and perfect. It is often possible to improve defective limbs by early attention and shoeing. In a youngster going wide, a common fault in foals and mature horses alike, the outer side of the column of bones of the limb is longer than the inner, and hence causes the limb to bulge outwards. Greater pressure is exerted on the outer wall of the foot, which wears away, while the inner wall grows too long and soon the foot gets mis-shapen. Such a foot will prevent the limbs from assuming their natural direction. In such a case the inner wall should be cut down, the toe shortened and the outer wall allowed to grow long. The inner side of the frog may also require to be lowered so as to allow the inner wall to come to the ground.

Breeders of the best horses always recognize that the foot is the foundation of the animal. Many a youngster comes into their stud, not too well fixed for shapely feet or legs. This fault does not give the breeder much worry, as he knows that if there is a good coronet, and good quality of horn in hoof, a little study, care and attention to cultivate the foot will bring the graceful carriage and close hock formation that are the outstanding signs of uality in a Clyde or heavy drafter.

The Structure of the Hoof

A brief study of the hoof, and a familiarity with the different parts and their functions will help to simplify the work in keeping the young colt's hoof in proper condition and shape.

The coronet is the upper limit of the hoof between the quick and the skin of the limb. It is from here that the wall of the hoof is secreted. Around the coronet is also situated a ring which secrets a varnish named peripole, which covers the outside surface of the hoof, and prevents evaporation from drying up the hoof. This varnish should never be rasped off in the proeess of shoeing.

The hoof is simply modified skin

Dr. J. Woodbury's Horse Liniment

THE INFALLIBLE REMEDY

For the removal of Splints, Bog Spavins, enlargements of any and every description it has no equal. Given internally, it will promptly relieve and remove any and every character of Cough Enlargements of the Glands, Affections of the Kidneys. For distemper, strangles, and colic it is infallibly the remedy All horses that are stabled should have an application of Dr. J. Woodbury's Horse Liniment to the boofs of the forefeet to prevent tbeir becoming feverish, dry, brittle, hard, contracted or otberwise injured Insist on baving Dr. J. Woodbury's Horse Liniment. We warrant it to effect that for wbich it is recommended wben used according to directions. Its beneficial effects are so prompt and decided that it has excited the admiration of the leading borsemen of the Dominion and secured tbeir highest confidence.

Bear River, N. S.

Dear Sirs:—We do not hesitate in recommending your Dr. Woodbury's Horse Liniment. We have used it in the woods for coughs, colds, distemper and cuts and would say tbat no lumberman should be without it.

Yours truly, Clarke Bros.

Hubbard's Cove, N. S.

Dear Sirs:—I bave used Dr J. Woodbury's Horse Liniment in my stable for years and consider it tbe best liniment on the market for botb internal and external use.

Yours truly, C. C. McLean.

Truro, N. S.

This is to certify tbat I have used Dr. J. Woodbury's Horse Liniment witb the very best results for colds, coughs, distemper and all lung deseases. It is the best to give borses in the spring to keep them in condition. It purifies tbe blood, cleanses the lungs from impurities wbich may exist and gives the system healtby action.

Newton Lee, Owner "All Right" 5817.

Elmsdale, N. S.

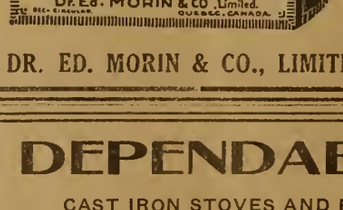
Dear Sirs:—Kindly send me 6 dozen bottles Dr. J. Woodbury s Horse Liniment. I bave not a bottle in the store and it is the only kind my customers will take. Yours truly, Elmsdale Mercantile Co.

Elmsdale, N. S. Dear Sirs:—I cured my horse with Dr. J. Woodbury's Horse Liniment. It was a bad case of distemper. I always recommend this liniment to my friends as tbe best for all diseases of the horse. Yours truly, H. R. Whitebead.

Dear Sirs:—One of my horses had a bad cough and I made a complete cure with three bottles of Dr. J. Woodbury's Horse Liniment. The cough was of twelve months standing. In my large experience with horses I consider this liniment to be the best made for all diseases in the borse, I recommend it to my friends. E. J. Anderson, Truro, N. S.

FRASIER THORNTON, & CO., Limited, Manufacturers: Cookshire, Quebec, Canada

The Recognized Specific of Diseases of the Horse



A sovereign remedy in powder form which cures, Coughs, Heaves, Colic, etc. It strengthens the work horse as well as the race horse, and enables them to do more and better work. It has been successfully prescribed by many veterinarians notably by Dr. J. D. Duchene in many critical cases, where results have proved remarkable.

A 50c box will be sufficient for six days' treatment.

DR. ED. MORIN & CO., LIMITED, - - Quebec, Canada

DEPENDABLE GOODS

CAST IRON STOVES AND FURNACES.
CAST IRON PIG-TROUGHS AND OAT-BOXES.
CAST IRON GRIDDLES, FRYING PANS, ETC.
CAST IRON COW-TAIL HOLDERS AND HORSE WEIGHTS.
TURNIP PULPERS, FEED BOILERS, SHOE LASTS, WAGON BOXES, SLED BENCH CASTINGS, and other durable farm and household requirements.

MANUFACTURED BY

THE SMITH FOUNDRY CO., LTD.

FREDERICTON, New Brunswick

HAULING BIGGER LOADS

without extra spanning is easily accomplished when you use

MICA AXLE GREASE

"Use half as much as any other"

Axles are rough and porous, causing friction. The mica flakes fill the pores and the grease keeps them there. Mica Grease prevents locked wheels and hot boxes, gives sure relief for unnecessary strain on horses and harness.

EUREKA HARNESS OIL

"Lengthens leather life"

replaces the natural oils that dry out of the leather and puts new life in old harness. It penetrates the leather leaving it soft and pliable, and overcomes the worst enemies of harness—water and dirt.

Sold in standard sized packages by live dealers everywhere.

IMPERIAL OIL LIMITED

BRANCHES IN ALL CITIES

MINARD'S "KING OF PAIN" LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

I was cured of a bad case of earache by
Minard's Liniment
—Mr. S. Kaulbach.

I was cured of sensitive lungs by
Minard's Liniment
—Mrs. S. Masters

Manufactured by the
Minard's Liniment
Yarmouth, N.S.

modified to resist the excessive wear imposed on it, and is composed of four parts; the wall, bars, sole and frog. The wall is the part visible when the foot is on the ground, and it is divided into three parts, the toe, quarters and heels. It is longest and thickest at the toe, and shortest and thinnest at the heels, where expansion occurs. This wall does not terminate at the heels, but is reflected inwards, terminating at the apex of the frog. These reflected portions are called bars. Th ebars act as weight carriers, and in a good foot must be strong and well developed. The sole of the hoof is concave, and especially so in the hind feet. It is not intended to carry weight, except at the outer edge where it joins the wall. That junction is marked by a white line noticeable in the newly dressed hoof.

The frog is the triangular, elastic pad between the bars and behind the sole. In the centre, and at either side, there is a deep cleft. In a good foot the frog should project beyond the wall, and in both shod and unshod hoofs it should always come in contact with the ground and bear weight.

The Growth of the Hoof

The growth of the hoof is influenced by many conditions that are under the control of the caretaker. In grows faster than in diseased and badly nourished ones. It is more active in growth in warm weather than in cold, and the unshod hoof grows more quickly than the shod. The parallel rings that are seen round the surface of the hoof show that the animal has been in somewhat irregular health, or has passed through alternate periods of neglect and rightful attention. The wall of the hoof grows from the coronet all the way round at the rate of about half an inch per month. It takes fully a year to be renewed at the toe, five or six months at the quarters, and three to four months at the heels.

For diseased, brittle feet, a hoof ointment is very useful. Liquid tar, bees war, honey and glycerine, of each an ounce, lanoline and vaseline, three ounces each, is a useful preparation.

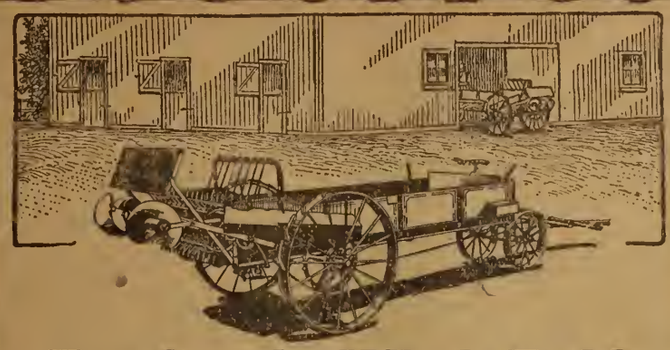
The growth of the hoof can be stimulated by repeated mild blistering around the coronet. This encourages the growth of the hair likewise, which is one of the points in a good Clyde. Liquid cantharides is a very useful preparation for this purpose and should be rubbed into each coronet for about three minutes. The most marked effect of blistering young colts of two or three years of age is observed in the spring time. Let one month elapse between blistering and anoint the parts daily with a non-irritating oil. The young foals, before weaning time, should not be blistered. Soft soap, well rubbed in, will be sufficient to encourage the growth of hair and hoof around their coronets.

Not one farmer in a thousand ever seriously thinks over the winter condition of the young colt in regard to healthy growth of hoof. Lack of opportunity for exercise on hard ground must be supplemented by artificial methods. Hot manure all night in the box stall and soft snow all day are about the worst conditions imaginable for the hoof and this, is the fate of the young colt in winter. Carefully cultivate the young hoof, and watch its growth in winter, and you will find reward in the mature horse. A little interest and care in winter will go a long way to place the horse breeding industry of Canada on a better "footing."

CARE OF MARES BEFORE FOALING

Carelessness and lack of knowledge are responsible for a large number of losses which occur during foaling. This s doubly true because in case of trouble, aid must be given quickly and accurately. The loss of foals before weaning time has been estimated from 10 to 25 per cent. of the crop and the greater part of this loss occurs before the foals are two weeks old. Much of

(Continued on page 365)



Fertilize the Whole Field

ONE great feature of the **McCormick** spreader is that it fertilizes every particle of soil, spreading an even coat of manure, light or heavy as desired, up hill or down.

This evenness of spreading is due to **McCormick** design. The reversing apron is driven by a worm feed which maintains the same relative speed of apron to beater at all times. The manure is thus fed steadily to the beater, which tears it into small pieces and delivers it to a spiral beater. The spiral gives the manure a second beating, makes the pieces still smaller and spreads evenly beyond the wheel tracks. Each particle of the soil is thus properly fertilized, and the whole field put in condition to produce a bumper crop. No manure is wasted. A **McCormick** spreader makes twenty loads do the work of forty spread with a fork.

McCormick spreaders are made in three sizes. No. 8 is a 49-bushel machine; No. 5, 55 bushels; and No. 6, 63 bushels. All are of the popular low type, with narrow boxes, cut-under front wheels, and strong steel frames.

See the **McCormick** local dealer, or write the nearest branch house for catalogue and full information.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

PEERLESS PERFECTION

Absolute Security

WHEN you go away for a day or turn in for the night, *you are certain* your stock is locked in—they can't get over, under or through the spaces—a perfect fence for hilly or uneven ground, through streams; protects poultry, ducks, geese, sheep and hogs. Can't sag or break down and will turn an unruly horse

Peerless Perfection Fencing

is made of best heavy Open Hearth steel fence wire, the impurities burned out and all the strength and toughness left in. Makes the fence elastic and springy. It will not snap or break under sudden shocks or quick atmospheric changes. Our method of galvanizing prevents rust and the coating will not flake, peel or chip off. Every intersection is securely clamped with the famous Peerless Lock.

Send for catalog. It also describes our farm gates, poultry fencing and ornamental fencing.

Dealers nearly everywhere. Agents wanted in unassigned territory.

The Banwell-Hoxie Wire Fence Co., Ltd.

WINNIPEG, MAN. HAMILTON, ONT.

More Eggs and Fertile Eggs

Now is the time to plan for profit.

Pratts POULTRY REGULATOR

Builds up healthy, happy layers with big egg-producing records. Increases fertility and insures perfect chicks. A very few of the extra eggs you get will quickly pay for Pratts.

Ask your dealer for the popular-priced pkgs.

Write us for FREE Book.

Pratt Food Co. of Canada, Limited.

68F Claremont St.

Toronto.

P-16

POULTRY.

THE CALL OF THE HEN

For the past few months our publicity department has been shouting for more poultry and more eggs to take the place of meat, which is needed at the front. Our experimental farms have published ration lists for egg production and even adviised us to leg-band our hens and try to cull out all non-laying hens from our flocks.

However, here is where they stop. Is it possible that these men of research don't realiize that there is a scientific side to the humble hen as well as our live stock and seed grain?

When our herds fail to come up to the proper standard they advise us to breed them up with registered sires. When our grain fails to make a good grade they say: "Get pure registered seed." But whe nthe hens fail to come through with a profitable margin of eggs they fail to tell us how to remedy the matter.

As a breeder of pure bred poultry I get a great deal of pleasure from my flock in spite of the very strenuous times we are undergoing on the farms.

This question of the efficiency of the hen has been on my mind a great deal of late and now I'm going to give you some of my ideas on the subject. If anyone else can start something I'd be glad to hear theiir ideas too, for I consider that the subject has been dead long enough.

A few weeks ago I purchased a little book entitled "The Call of the Henn' by Walter Hoagana, and in a few hours' time I possessed the scientific facts of how to determine and breed high egggg capacity hens that had taken nearly a lifetime of study to figure aut. I wouldn't take $10.00 for the little book today and it should be in the hands of every poultry raiser. It's copyrighted and, therefore I cannot explain how to tell your best egg record hens but anyone can secure a copy from the Rhode Island Red Journal, Waverly, Iowa, for the sum of $2 postpaid.

With this book as a guide I believe that 90 per cent. of our flocks could be doubled for egg production in two years. As to the breed one chooses, I believe that the dual purpose fowls are the best for the farm. It has been proven that they will lay practically as many eggs as the straight egg breeds and when matured we have something worth while to eat.

It's not so much the breed as the "strain." Get an egg strain in the breed you prefer and then breed it up from your best egg capacity hens. You say what are my egg capacity hens? All I can say is get "The Call of the Hen" and you won't be long in doubt.

Here iis my plan for the big egg drive:

1. Buy settings of eggs from the trap-nested or high capacity hens.
2. Invest in a scientfic poultry book.
3. Use only big egg capacity male birds.
4. Feed and house your birds properly.

In most cases it is not practical for a farmer to trap-nest, so I say, let's get our eggs from the specialist who can keep egg records. Don't begrudge him a good price for his eggs if his stock is good. I'm paying $5 and $10 per setting for eggs this year and I think they are cheap at that if they produce hens for me that wi l lay from 200 to 250 eggs their first laying year. That's the kind of stuff we need for our foundation stock if we expect to make good in the big drive.

Study your farm papers and your poultry journals for breeders advertising this class of birds and don't be afraid to spend a few dollars for you will get it back many times if the stock is good. And just a word to the breeders right here, too.

Don't hide your light under a bushel—if you have something good, advertiise it! There's a big demand for good stuff and you owe it to your country to boost all you can—so advertise and then advertise some more.

I'd just like to say a few words here about exhibition birds as egg producers. Many people will declare that birds of exhibition classes won't produce the eggs and in many cases I believe it is time. However, as a breeder of Rhode Island Reds in particular I can say that many of the blue ribbon winners in the U. S. last year produced well over the 200 egg mark and I myself have ordered several settings of eggs from prii.e winning females that have laid from 200 to 250 eggs in 10 months of actual trap-nesting. So don't let them tell you it can't be done for it has been done.

Once you have good foundation stock it's a very easy matter to test out any low egg capacity hens if you are equipped with Walter Hoagan's charts—and only the best hens should be used to breed from the following year.

Now comes the male bird. The male bird is half the flock at breeding season and too many people thing that any old thing that can crow is all that's necessary.

If you have a 200-egg hen and use a 100-egg rooster your pullets will likely drop back to the 150-egg capacity or lower—so be careful about the male bird you use. Study your chart for capacity, type, and propotency and don't fall down in yiur mating. Too many people discard their male birds too soon. If you have a plendid cockerel don't pass him up as a cock bird for with proper care a male bird is good for three years.

If you are in doubt as to matings don't hesitate to ask advice from the breeder youm ay be dealing with. He will be glad to help you out and it often saves a lot of valuable time and results.

As to housing and feed I'm not going to say much as that is a subject very well taken care of. My houses are two and a half feet under the surafce of the ground. Concrete 3-foot wall with boards above, plenty of glass and cotton front and I keep the houses well supplied with litter. Our houses mast be warm—for a frosted hen won't lay.

I use wheat screenings in the litter. Oat and barley chop in the hopper. Also oyster shell and two or three times a week I supply vegetables and meat scrap.

This is the egg campaign I've adopted for 1918. If it looks good to you join the ranks, or if you have a better one, let's have it.—R. L. Rash.

NEPONSET ROOFS

NEPONSET PAROID ROOFING NEPONSET TWIN SHINGLES

THRIFT and production are the farmer's watchwords this year. *Paroid* is a tremendous help to the thrifty farmer, because the price is right, it is easy to lay, will require no repairs, and will last for many, many years. To date, Paroid has a record of over 19 years' service.

NEPONSET **Paroid ROOFING**

If you are roofing, or repairing roofs this year give your building the protection of Paroid. For instance, burning cinders falling on a Paroid roof die out harmlessly.

Paroid makes an attractive roof, too, either in the gray finish, or with the red or green crushed slate surface.

Insist on the genuine Paroid. Look for the label as shown here.

Neponset Twin Shingles for all Residences

Sold by Hardware and Lumber Dealers

BIRD & SON - Head Office, Hamilton, Ont.

—Warehouses:—

Montreal, Toronto, Winnipeg, Calgary, Edmonton, St. John

The Largest Manufacturers of Roofings, Wall Board and Roofing Felts in Canada 178

The Little Wonder Cycle Hatcher

Hatches every Hatchable Egg, holds 50 eggs, made entirely of metal, except insulation; self regulating; requires no supplied moisture and will last a life-time. Shipping weight 20 lbs.

(Patented)

Price $10.00

Boxed and delivered to any railway station in the Maritime Provinces.

We manufacture all sizes of Incubators, Brooders, Coal Burning Brooders, and a full line of Supplies.

Model Incubator Co., Limited,

192 River Street, Toronto, Ont.

"Empire" corrugated Iron

"EMPIRE" Corrugated Iron is made with deep corrugations fitting closely and snugly; it makes a splendid, strong, rigid wall that withstands all storms. Remember—building with Metal gives you fire-proof, weather-proof and lightning-proof buildings.

Our "Metallic" building materials—the "Quality First" kind—may cost a little more than other building materials, but they're permanent. "Eastlake" Galvanized Shingles; "Metallic" Ceilings; "Metallic" Rock and Brick-face and Clapboard Siding; Roof-lights and Ventilators, Silo Tops, etc., save you money.

Write for interesting booklet giving complete information, prices, etc.

Metallic Roofing Co. Limited
Toronto - Winnipeg
174

MATING THE BREEDING PEN

The shortage of labor and the tremedous increase in feed prices make it imperative that only the very best producers should be kept. Stock that would return a substantial profit in pre-war times, when feed was cheap, will now, under the changed conditions, show a loss. This, perhaps, applies more strongly to poultry than to any other class of live stock, as the securing of suitable feed is becoming more and more difficult.

In the mating up of the breeding pens these conditions hould be borne in mind. Aim to use nothing but your very best birds as it is only from these that the highest results can be obtained.

Selecting the Breeders

The male to head the flock should be from a high producer and if possible to know that his sisters are showing their ability to lay, all the better. Not only should his pedigree be right but he should show vigor in every move. A bird of this description will show a fairly broad head with a rather short, stout beak, a bold piercing eye, a skin that is soft and velvety to the touch, shanks with fine scales and showing a certain amount of red pigment down the outer sides.

His mates should be vigorous females that have shown by egg production what they can do. If trap nests are not used—and they are not o nmost farms—band those pullets that start to lay first and select the breeding pens from them.

The ideal mating is a well developed cockerel of the foregoing description mated to young hens but if enough hens of the desirable type are not available do not hesitate to use pullets, so long as they are well matured and vigorous they will give the best of results.

UNITED STATES FOOD ADMINISTRATION RE STORAGE POULTRY

"All poultry stored before February 1, 1917, must be moved out of cold storage warehouses on or before March 1, 1918, as heretofore directed, but the Food Administration will initiate no action against holders of such poultry if sold before March 1st, to direct distributors to the consuming trade and held in the name of such distributers for n ot exceeding 30 days after March 1st for purposes of actual consumption. In cases where dealers have not moved this poultry as directed because of inability to secure transportation facilities and have evidence of these facts, application should be made to the Enforcement Division, Food Department, for limited extension beyond March 1st."

EGG SHELLS ARE ABNORMALLY TOUGH

What causes the lining of an egg shell to be tough?

It is generally believed that errors in diet are responsible for any marked departure from normal in this respect. At any rate, a dose or two of salts to clear out the digestive system, followed by a careful adjustment of the diet to the requirements of the laying hen will usually correct it. Feed as wide an assortment of grains as possible without using wheat. Make a dry mash of equal parts wheat bran, shorts, ground oats, corn meal and beef scrap. Feed this in a self-feeding hopper for best results.. Rather better results are obtained from feeding cracked corn than whole corn. When cracked corn is procured from a local mill or the corn is cracked in a feed grinder, avoid waste by sifting the finer particles out and using them in the dry mash or mixing with milk to make a johnny-cake. When skimmed milk or buttermilk is available it is an always good addition to the poultry ration. Oyster shell should be always available for laying hens, or some form of lime for forming egg shells. With plenty of water to drink, this makes a good, all-round ration, which may be varied according to the grains that are available.

ABOUT POULTRY

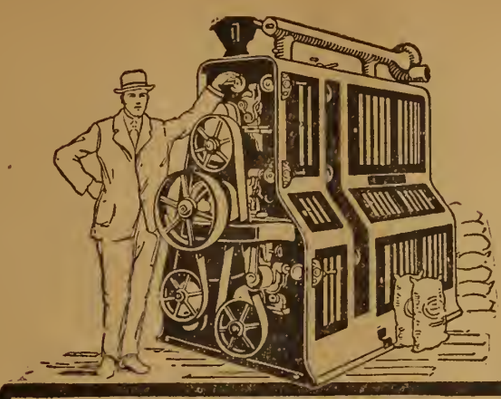
When dressing old chickens for the table, dip them quickly into boiling water, in a pail deep enough to immerse the whole bird at one dip. Hold under only a second, then lift out and roll in a uiece of old blanket, to team and lossen the feathers. This is a good way to loosen feathers for plucking any fowl. The blanket should be thick, so that no heat escapes. They should be left in this about half an hour, then unroll and pull off the feathers quickly. Every feather, except the coarse wing and tail feathers should be saved. If they are not clean, squeeze them out of a warm soapy water and rinse, then place in a large cheesecloth bag and turn and shake occasiionally in the sun, till they are fluffy again. If not wanted for pillows, save in a large sack to be sent with a poultry shipment. They have a high market value.

If a fowl is killed before theday it is to be used, the intestines and crop sheuld be removed as soon as it is cold. When a fowl has been purchased from the market with the intestinies in, it should be drawn at once and the cavity washed thoroughly with water to which has been added a teaspoonful of soda.

When a very old fowl is to be baked parboil, if possible, for two hours, and add a teaspoon of strong vinegar to the boiling water. Remove surplus fat before parboiling, and put it in the baking pan.

Goose or chicken oil is splendid for shortening, but should, if possible, be used within a short time, as it is more apt to spoil than other grease. To clarify a large amount, so it will not spoil ,heat in a deep kettle and fry a batch of potato chips in it. Always keep in a cool place.—L. W. M.

There is on doubt but what caponizing is profitable. The operation costs nothing, and the capons gain in flesh much more rapidly from the same amount of food than other fowls, and when they are sold they often bring nearly double the market price for hens.



Grasp this Opportunity

Establish yourself in the milling business. Your country needs more flour. Thousands of new acres of wheat assure increased production. The local mill is coming back into its own.

Become the miller in your town. Operate a

Marvel

The Self Contained, Quick Process

Flour Mill

This simply constructed mill is your means of helping your country to take care of the increased wheat supply, of making better war flour at the lowest cost—and returning big profits to you. ***A Marvel Mill makes a better barrel of flour cheaper.*** It mills any grade or any grain and conforms to all government regulations.

Made in two sizes — 25 and 50 barrel capacities. No experience — no expensive buildings needed.

If you have as little as $3000 to invest you should get all the facts of this proposition at once.

The Canadian Fairbanks-Morse Co., Limited

St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windsor, Winnipeg, Saskatoon, Calgary.
53

Royal Purple Poultry Specific

Is the big link between few eggs and a full basket.

It Increases the Egg Yield

Feed Royal Purple Poultry Specific to your fowls daily in a hot or cold mash. It will keep your hens active and healthy by assisting them digest and assimilate the food eaten.

If you feed our Poultry Specific according to directions to fowls which are properly housed you will get nearly as many eggs during the winter months as you ordinarily get in the summer. It will pay for itself many times over. Read the following letter from Robt. Cameron, Hensall, Ont.

"I have been using your Royal Purple Poultry Specific for the past year and it pays for itself many times over in the extra production of eggs, and it makes my hens lay in the winter when the price of eggs is high."

Sold in large and small packages.

80 PAGE BOOK SENT FREE

Send for this valuable book which describes the common diseases of poultry and stock. It tells how to build and remodel poultry houses and how to raise calves without milk. Write for a copy now.

W. A. Jenkins Mfg. Co. Ltd., London, Canada

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

THE FIRST BOTTLE

(By Mary Heaton Vorse)

There is a drama which is enacted in every home in this country where there is a baby. It is called "The First Bottle." In some households it occurs very early in the life of the Little Person, right at the very start, and then everything goes well—or it doesn't.

Before this moment arrived in the life of Constance, Louise was seven months old.

I think from the first moment Constance knew what the matter was and that the first little vague fretting of Louise announced to her that her day was over. And though she knew in her heart of hearts that the fateful hour had struck, she put by the moment of facing it as long as she could. The world in those days was full of thorns.

When John would say complacently, "What a hungry little pig she is, she eats harder and more all the time," constance would wince.

A mother may blind herself about such matters. She may tell herself that her Louise is getting ready to cut a tooth—that is why she tries to put a whole fist in her mouth. Teeth, too, may account for the fretfulness. Teething in the world of a little baby covers a multitude of sins. There is nothing, as Constance found out, from colic to temper that will not make older women say, "It's her teeth!"

But that was not what the scales said. Like all properly-reared children, Louise was weighed every week —well, nearly every week, if you must have the truth.

There came a time when the regular gain of ounces lessened with sickening regularity. But still Constance wouldn't believe it. She did not say it out loud even to herself. She looked at its face for the first time when a neighbor, who poked in a kindly gray head every little while to see how things were going and because her grandmotherly heart felt the need of a little baby-worship, said, "She's been kind of fretty of late, hasn't she? I don't believe but what she isn't getting enough to eat? She said it quite cheerfully, too, as if it were not a terrible thing.

"I thought it might be her teeth," objected Constance.

"Oh, that isn't her teeth," announced this mother of grown sons. "That baby's hungry! Tell your mama, darling, I'se hungry; yes I is."

How can people say such things out loud and with a smile. Her baby hungry, and she, poor mother, powerless to help it! The next time Louise was weighed she hadn't gained.

Constance went to the doctor. He told her what she knew all along; Louise was hungry.

Of course, she knew that ths day must come. Indeed, she did not dread it so very much. After a certain time the bottle must take the place of a baby's mother. It is the natural order of things, just as in the time bread and butter and beef juice again supersede the bottle. But now that the peril of it, that had always been lurking in the background, suddenly seemed the largest thing in life.

As Constance passed the drugstore, the harmless, meek-looking glass nursing bottles displayed in the window seemed engines of destruction. She hated them. She hated the cows which passed by the door of an evening, for they, too, might bring death and sickness. Constance passed the evening reading about the artificial feeding of infants, and the more she learned, the more frightened she was. She had always known that babies sicken and sometimes dit at this time, but she hadn't realized the magnitude of the danger.

A feeling of inadequacy to her task rushed over Cnostance. She hadn't felt so helpless and so alone since that awful moment when the trained nurse left the fate of Louise in her untutored hands. John had helped her then with his very presence. Now he was nothing to lean on. He had no experience in the weaning of babies. While he was sympathetic in the matter of germs, he also remarked:

"Al babies have to be weaned some time, don't they? They generally get through all right." That was it, generally they do. But he had one suggestion of value.

"Why don't you ask your mother about it?"

Now there is a great gulf fixed between the rearing of babies in this generation and the last. There is hardly a conscientious young mother living who does not wonder how she and her brothers and sisters lived to grow up, reared as they were in the dark ages. More than once Constance had found her mother unsympathetic about what she termed "new fangled notions." Then, too, older women forget so much. To vital questions like "How old was I when I cut my first tooth?" one was apt to receive answers like "Mercy, Constance, how do you expect me to remember after alt this time!" However, it seemed to Constance that this must be different. Surely her mother would remember more about this. For Constance felt sure that if she lived to be three hundred years old she would never forget the awful sinking of the heart when the doctor so calmly confirmed her fears. But all Constance's mother had to offer was:

"You're going to wean the baby, are you I thought you'd have to soon. It will be much better for you too."

"Much better for her!" Her mother could think of that with a menacing, germ-laden cow mooing triumphantly as it passes the house!

"Did you have much trouble when you weaned us?"

"Trouble? Why, I don't remember any special trouble. Some babies take to a bottle easier than others, I suppose. My children were like others about that. Yes, I think I did have some trouble with John—was it John —no, I think it was Henry; yes, your brother Henry I think it was. He simply wouldn't take the bottle. We had to feed him with a cup and spoon. But he did very nicely in the end. I remember how cunning he looked with his dear little cup and spoon."

That is the kind of thing grandmothers remember, how cunning they looked with the little cup and spoon! But it isn't what poor young mothers want to know.

It all sounds rather humorous from the outside. What a tempest in a teapot, to be sure, and what tragic airs over such a common thing as the weaning of a baby! But it was not funny to Constance, for she knew that this very simple every-day little affair was in reality a matter of life and death, and in cases where it is not a matter of life and death it is a matter of sickness and health; and there she was, so ignorant and so young in the face of such big forces, which she understood so little. It was for her to do, and she had to do it alone. No one could help her. And even though her anxiety communicated itself to the rest of the household, it didn't touch them deeply, not even John. He did not understand. The responsibility wasn't on his shoulders.

So there was Constance preparing to make the awful jump in the dark. The Drama of the First Bottle was an actuality; the cast was already for actiion.

The house seemed full of imminent danger. It was packed closest in the nursery, and from there it trailed out over all the rest of the house and its dwellers like a fog. It even penerated into the kitchen, where the bottles were being boiled. How long does it take to make them sterile? Constance wen and looked it up in the book. Every receptacle that was to hold milk, every spoon tha twas to ladle out sugar or lime water, she boiled. For the moment, the world seemed populated wholly by inimical germs. And as to the harmless-looking milk in the sealed bottles, why that has become a very witch's brew. It was supposed to come from a clean barn, but how can one be sure? The man that milked that cow might be coming down with scarlet fever, and, besides that, cow's milk might not agree with Louise, anyway.

Constance's horizon shrank to a pinpoint. Neither wars nor picnics could have interested her. She was arranging the baby's first bottle of what is so well termed "artificial food." What she wanted to know was, were those bottles sterilized or not? She did not care what merry-makings took place without her. Let all the world go if they wished; it didn't interest Constance. She was occupied with, weighty matters.

What formula should one begin on? It sounded so very simple in theory; it was so difficult in practice.

The theory goes this way: Of top milk take a certain percentage and to this add a certain prescribed amount of water and sugar. Preserve scrupulous cleanliness of all the articles employed; bring the sacred bottles rapidly to a high temperature and cool rapidly. That is all. It is simple than making cake.

That is all; but there is no other simple task in the world that is so hard to get right. While she worked, Constance could hear Louise talking to herself. She was so well and happy now and here was her own mother going deliberately to give her something that might make her sick and unhappy. It had to Constance all the terrors of a major operation.

Nor did she receive any sympathy for her meticulous and anxious care. This measuring of ounces is a new thing, you see, and is therefore looked upon with suspicion by the older generation and by a good part of the younger.

On the piazza the gray-haired neighbor and Contance's mother were talking. Her mother's voice floated to her:

"Gracious! Life's hardly worth living nowadays, the fuss that's made over every little thing, what with boiled water and sterilized milk! I gave the baby a drink from the faucet the other day and one would have thought I was trying to murder the child, the way Constance acted. She gives it boiled water if you please, boiled water and sterilized milk! Boiled and kept in a bottle by itself!"

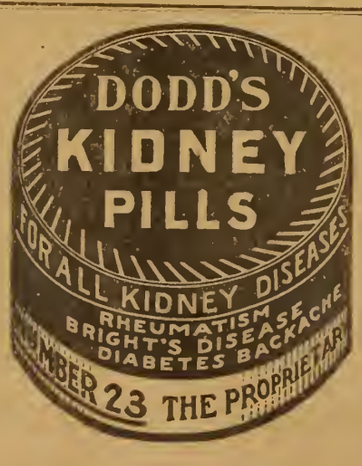
"In my day," said the neighbor, when we got the baby's bottle ready, we put some good rich milk and some water together and sweetened it till it tasted good."

It was a beautifully simple way. If the baby had a colic afterward, one could tell that it had not agreed with it; if it did not have a colic one might assume that it had. The older generati oncan hardly forgive the mothers of this for their new ways, while the mothers of this generation listen to this artless prattle with a shudder. Such t alk seems to the poor, anxious creatures only a degree removed from the placid discussion of child murder.

"Yes," went on Louise's grnadmother. "Constance is acting just like a hen with its head cut off. One would think, to look at her, she was getting ready to poison the baby."

"The work young mothers make of babies nowadays! It's a wonder there's a child lives to grow up, with the sterilizing this and the sterilizing that. Thank God, my babies were all raised before germs were invented. Whenever I see an article on germs, I skip it," the neighbor added proudly. "I don't want to know anything about nervous."

"They'd make you more nervous if you had a young baby in he house," said the grandmother with spirit. "Look at Constance, now. Of course, weaning a baby is a little trying, to be sure; but if she could get a kettle large enough, Constance would boil



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this whole house and everybody in it, to be sure everything was sterile. But there's one thing she can't sterilize; htat's the baby's thumb! And I'm perfectly sure if she keeps on she'll upset that child pottering and fussing as she does."

At last the mixture was prepared with all accuracy. Constance had followed every direction and said to herself that she was going to give Louise her first bottle.

Oh, but was she There are two to that bargain, as Constance speedily found out.

Some other member of the family must, of course, administer the dose. The choice fell on the baby's grandmother, while Constance, after the custom of young mothers in such circumstances, huddled at the other side of the closed door and listened in anguish of spirit to what went on inside.

Take one lusty baby and support it firmly with one hand. Now take the nursing bottle in your right hand and insert it in the baby's mouth. That's easy enough to do isn't it? See what happened with Louise.

She chewed on the rubber a little and remarked "Ag-goo." But that is not what was wanted of her. A rubber nipple isn't a plaything to be chewed on and goo-ed over.

Hhe grandmother now shook the bottle slightly, to give Louise some idea of what was expected of her. Warm drops of milk slid down her little face. She made no effort to swallow them. Besides, she no longer desired the rubber thing n iher mouth, and spit it out. The grandmother watched her chance. Little persons like Louise are always opening their mouths, and the rubber nipple was popped in again when Louise was off her guard. This time a few drops ran down her throat.

"Ah, that is what it is in here for, is it? Something to eat!" Like the fair-minded child that she was she was willing to give it a trial. She took a tentative swallow. A queer proceeding it was anwway; one could see she thought. But she was willing to do her share and her share consisted in tasting gingerly of that moisture into which had gone so much heartbreaking care.

"Oh, .please take it, Louise!" Constance boaned in spirit. "You do not know how hard your mother's worked! You do not know how much it means to me! Here I am behind the door, listening to you. Please, please realize that this is your serious business in life. Please be good if you love me!"

But there was never a truer saying than that you can lead a baby to the bottle, but can't make her drink. Louise made it plain that she did not want anything to do with it, that is a sure thing. She was equally sure that she would not, and as for the tenth time the bottle was patiently presented before her gaze and in an unaware moment even slipped into her mouth, she broke forth into roars. She roared all over her; she roared with her hands and with her feet. She fought it. There was no coquetting with food, no fine-lady airs of a replete baby. On the contrary, she was hungry. The few drops that went down her throat were enough to remind her of that. She was hungry and wanted her nice soft mother, nor did she care who knew it. She wanted everyone in the house to know it, and everybody in the street and in the world, and she was determined that they should.

There is a phrase known to those who write of infancy, "the baby kicked and screamed." We are so used to it that we write it and read it lightly. Ah, but have you ever watched that terrifying spectacle with your own baby? She "kicked and screamed!" Indeed she did! It is a noise more terrifying than thunder. It is awful at any time. When she kicks and screams because she doesn't want to be "artificially fed," when she kicks and screams because it is her own mother she wants, the horror is intensfied.

Every one had sympathy enough then. No one could hear that tumult unmoved. John, you may be sure, walked the floor in an agony of helplessness. Louise's grandmother dropped her rocking chair attitude of mind, and as for poor Constance, she couldn't bear tht acry.

And there is another of those words that we have used so often that their meaning has worn off and left them smooth and insignificant. Now Constance learned the primitive meaning of those words, "I can't bear it."

Darkness brooded over the household long after Louise, replete, tranquil, had forgotten about it; for Constance had to come to the rescue, but all the family, except Louise, knew that the same scene must be gone over tomorrow and the day after. There was nothing for it but starvation. Louise would have to give in.

Next day the bottle was presented to her tentatively, humbly. All the household was unquiet; they walked up and down and asked each other: "Are they giving it to her now?"

One would think ti was ether, at least, that was being administered instead of a bottle of harmless milk.

With all precautoin and tact, the bottle was put before her. One would expect of course, a cry of indignation. But Louise had forgotten all about it. She did not remember that this is what made her doubt that there was justice in the world yesterday and which made her voice her angry distrust.

Wihtout any warning she took it as if this was the food to which she was accustomed. She ate placidly, her eyes roving around the ceiling. She filled herself full and talked for a

He Knows Just Why He Admires Them

DODD'S KIDNEY PILLS CURED MRS. MERCREDI

She Had Been Ill Two Years and Could Find No Cure.. That's Why Her Husband Is Enthusiastic Over Dodd's Kidney Pills.

Fort Smith, Alberta, March 15th.—(Special)—Among all the thousands of Canadians who praise Dodd's Kidney Pills for the good hey have done, there is no more fervent admirer of the great kidney remedy than Isidore Mercredi, of this place.

"Yes, it always gives me pleasure to say a good word for Dodd's Kidney Pills." Mr. Mercredi says. "My wife was sick for two years. We could not find anything to restore her to health. Then we found a pamphlet telling of several persons who had been cured by Dodd's Kidney Pils.

"My wife used just two boxes of them and she is perfectly well, to the great surprise of all our neighbors. They can tell you the same thing. I cannot recommend Dodd's Kidney Pills enough."

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while afterward, contentedly, that charming talk which is the little baby's poem in praise of food. It means:

"I have eaten. How bright the sun shines! I am full of food. How good is the world! I have eaten so I do not want to eat any more. How pleasant are the faces about me!"

And meditating on how pleasant is life with the stomach full, Louise fell asleep. The Drama of the First Bottle is over.

A SUBLIME FUNERAL ORATION

Here is a funeral oration that would seem to challenge comparison with some of the finest we possess by its pregnancy and its poignancy, its brevity and its sublimity. But even in spite of the hurried times we live in, it must be read at least twice for some of its many beauties to be realized," writes Mr. Coludesley Brearton in The Fornightly Review, in an appreciation of a new thinker, Binchara Branford, the author of "Janus and Vesta."

"To pay honor to the memory of the dead we living meet here today.

" 'From the bounteous womb of our great motherhood these dead heroes received the gift of life. That gift, in her defence from foreign foes, they rendered back.

" 'For us they faced the terrors of death; but such things veil from us their inner meaning.

" 'All great things and good hath God seen fit in His infinite wisdom to offer to our mortal eyes in forms that repel and chill our feeble hearts; whereas the garb of evil draws us as with enchantment. Our infiniteness comprehends not the peerless gift God offers, but in moments of exaltation of soul and ecstasy of body, the immortal spirit of man pierces through the dread form and sees with the inner eye the majestic figure of the All-beautiful. Bchind the veil of death appears a smile of ineffable sweetness so compelling that the spirit would fain abide there for ever.

" 'At that supreme moment when Death meets Life, Man rises to the pinnacle of heroism, and achieves his immortality.

" 'So came death to those brave ones whom we here in all reverence commemorate. In his embrace they consecrated Life.

" 'Their grave is the bosom of universal Mother-Earth and their vault is the starry firmament of Heaven. In the spirit of each lives the spirit of Earth. Dust we are, and to dust we all return. But every smallest particle of that priceless dust enfolds within itself a very galaxy of stars, and this God-created body thrills everlastingly in ways that we comprehend not, but yet can apprehend, with the magic of matter, the miracle of life, and that mystery of mysteries, the individuality of man.

" 'The Resurrection is not a tale that is told; not a fable whose truth is fled; but a great vision of the Spirit that dwells imperishrable and divine in the secret heart of each.

" 'Those whom the gods love die young. Let us weep no longer then, for those that are fallen, but enshrine in our hearts the deeds they did for us, and let their spirits breathe sweetly into ours the sublime truth that Death is no evil.

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" 'Then, not in vain, shall the Motherland in her need call unto us that remain to face our duty on the battle field of life, ever faithful soldiers of God. For the ancient saying stands fast; that the chief end of man is to magnify the glory of God and through suffering to enjoy Him for ever."

RUSSIA'S MIXED POPULATION

Russia, with an area of 8,600.000 square miles, exceeds all other countries in extent. With a population of 180.000,000, it exceeds all other nations in numbers. With over one hundred languages, it exceeds all others in diversity. For centuries Russia had been held together by a despotic Czar, backed by a vast army amidst an unarmed people. When the old Government fell from mere rottenness, and the army collapsed, distntegration of the whole fabric was the natural consequence.

There are wide discrepancies in language, physical type, custome, dress, and rcligion in Russia. The two main races in Russia proper are the Indo-Europeans in the southwest and the Finns in the northeast, the Finns being an offshoot from the Mongolian race. Russians or Slavs of Aryan or Indi-Europann descent amount to about 75 per cent. of the population of European Russia. They are members of the Greek Catholic of which several sects exist and they are divided into three stocks. The Great Russians, unmberinig about 52.-000,000 in European Russia, live in territory from which they have driven the Finns, with which people they are somewhat mingled, and thus occupy northern and central Russia, including the northeastern part of the "Black Earth" region, and also territory in eastern and southeastern Russia from which they have driven the Tatars. Physical ythey are blond, blue-eyed, and vigorous, with broad shoulders.

OLD TIME LOVE LETTERS

In an old book, dated 1820, there is says the People's Companion, the following very curious love epistle. It affords an admirable play upon words:

"Madame—Most worthy of admiration. After long consideration and much meditatioin on the grcat reputation you possess in the nation, I have a strong inclination to become your relation. On your approbation of the declaration, I shall make preparation to remove my situation to a more convenient station, to prcfess my admiration, and if such oblation is worthy of observation and can obtain commiseration, it will be an aggrandization beyond all calculation of the joy and exultation of yours.

Sign,

Sans Dissimulation.

The following is the still more curious answer:

"Sir—I perused your ovation with much deliberation at the great infatuation of your imagination to such veneration on so slight a foundation. But after examination and much serious contemplation I supposed your animation was the fruit of recreation or had sprung from ostentation to display your education by an odd enumeration or rather multiplication, of words of the same termination, though of great variation, in each respective signification. Now, without disputation, your laborious appliciation in so tedious an occupation deserves commendation, and thinking imitation a sufficient gratification, I am, without hesitation yours,

Mary Moderation.

PAT'S INVESTMENT

Pat bought a pig in the fall, paying $7.50 for it. During the winter he bought $10.50 worth of feed for it and in the spring sold the pig for $17.50.

A neighbor asked him how much he got for it, and when Pat told him he said: "Well, you didn't make much on it, did you?"

"No," said Pat, "but you see, I had the use of the pig all winter."

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COMMON CLEANING AGENTS

Such common materials ac ashes and brick dust should not be overlooked for souring purpuses. They are used much the same as commercial prcparations and serve the purpose quite as well. The best way to use scouring agents is to dip a large cork in water, then in the ashes or brick dust and scour the utensil with the cork. Much better rcsults are obtained than in using a cloth. Even soil can be used in this manner, and nothing shines up a knife so quickly as to dig a few dandelions with it.

These are old-rashioned metads, but are weli to remember for we are looking for the most inexpensive ways and means.

FREEDOM AND MARRIAGE

A gentleman travelling through Alabama was much intcrested in Uncle Ned. "So you were once a slave, eh?" said the gentlcman.

"Yas sah," said Uncle Ned.

"How thrilling!" said the gentleman. "And after the war you got your freedom, eh?"

"No, sas," said Ned gloomiyl. "I didn't git mah freedonm, sah. After de war I done got married."

When Driving

While driving I found the wind very chilling as it blew into the sleeves of my coata. I had two pairs of long gloves made of heavy brown kid, too worn for further service. I cut off the hands, cut opcn the wrists and stitched the two wrists together lengthwise making two large wrists, as it were. I made a half inch hem at the wrist and anaother at the elbow to accomodatc elastic. When driving I wera these over my other gloves and inside my coat with great addition to my comfort.

Dishes should be separated and sorted as brought from dining room.

COOKING HINTS

Cereal Biscuit Pudding

Soak one tablespoon of gelatine in one-third cup of cold water. Add two-thirdc cup of boiling water to dissolve Into two cups of milk, add one-half cup of biscuit crumbs, one-half cup of sugar, and one-eighth teaspoon of salt. Cook in a double boiler ten minutes. Then add two egg yolks well beaten. Cook two minutes. Remove from fire, and add the gelatine mixeure. When cool add one-half cup of whipped cream. Scrve very cold with cream.

Jellied Prnues

Wash one-third pound of prunes and cook until soft. Remove prunes from juice. In one-half cup of water soften two tablespoons of gelatine. Dissolve in the boiling prune juice. Add one cup of sugar, the juice of one-half a lefon, and the prunes, whicr should be stoned. Allof to stiffen. Serve with milk.

Mock Sausage

Soak one-half cup of raw Lima beans ovcrnight. Boil in same water until soft. Drain and force through a colander. Combine one-third cup of breadcrumbs, three tablespoons of artifical lard, and one egg with the bean pulp. Season with one-eighth teaspoon of pepper, one-rourth teaspoon of salt, and one-half teaspoon of sage. Form into sausage and fry in deep fat. Serve with sauted apples.

Cream Puffs

Heat one cup of water and one-half cup of vegeetable oil to the boiling point. Sift into the liquid one and one-half cups of white flour and one-half teaspoon of salt. Cook five minutes, stirring through the whole process. Cool. Add two unbeatcn eggs and mix thoroughly. Drop an oiled minutes. To fill remove a portion of the top.

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Filling for Cream Puffs

Mix one-fourth cup of corn starch with two cups of milk. Beat until smooth. Cook in the top of a double boiler until thick. Beat two eggs, seven-eights cup of sugar, and one-eighth teaspoon of salt. Pour the hot milk into the egg mixeure, stirring constantly. Return to the double boiler and coog until eggs thicken. Add one an one-half teaspoons of cooking oil. Cool and add one teaspoon of vanilla.

Split Pea Soup

Soak one cup of split peas overnight. Drain and add to two quarts of water, add a chopped onion and cook until the water is reduced to one quart. Put through a colander. Mix two cups of milk with three tablespoons of flour. When smooth add one teaspoon of salt, two tablespoons of cooking oil, and one-fourth teaspoon of butter. Add to the soup stock and cook until thick. This soup may be varied by substituting one cup of dried beans or lentils for the spilt peas.

Creamed Eggs in Potato Nests

Cook the eggs until hard. Shell and separate the yolks from the whites. Chop the whites and add to a medium white sauce. In an oiled baking-dish make nests of mashed potatoes. Put the white sauce with the egg whites into the nests. Grate the egg yolks over the top and place dish in the oven to brown.

Rolled Oats Bread

To two cups of rolled oats add two cups of boiling water. Let stand until cool. Add one-half cup of molosses, one-tablespoon salt, and one tablespoon of cooking oil. Then add one-half yeast cake softened in one-half cup of lukewarm water. Add three cups of bread flour. Beat well and let rise. Beat thoroughly and turn into buttered bread tins. Let rise and bake.

Corn-Meal Puffs

Mix and sift one and one-half cups of corn meal, one and one-half cups of flour, one-half teaspoon of salt, one-uqarter cup of baking powder. Beat well the yolks of two eggs and add one-half pint of milg and mix with the flour. Beat vigorously for three minutes, and then fold in the stiffly beaten whites of the eggs. Bake in little gem-pans in a hot oven.

Cheese Pudding

In one-half cup of milk and one egg, soak slices of bread until soft but not broken. Put a layer of bread an then one of the grated cheese into an oiled baking dish. Repeat until one-third cup of cheese is used. Have bread on the top layer. Bake in moderate oven until cheese is melted.

Cheese and Kippered Salmon

Put into a casserole a layer of crumbs, a layer of salmon, and then a layer of grated cheese. Repeat until one-half pound each of salmon, cheese an dcrumbs are used. Finish with cheese. Pour enough sweet milk over all to moisten. Bake in moderate oven one-half hour.

Apple Jam

Pare and cut apples into quarters, core and cut into rather thick slices; to every pound of apples allow one pound of brown sugar, and to every five pounds of apples allow the thinly cut rinds and juice of four lemons and one half pound of ginger root and one ounce of cloves. Let stand in a bowl until the apples are a rich amber color and perfectly clear.

Brown Sugar Cake

Mix and sift three cups of flour, two cups of brown sugar, two teaspoons of cinnamon, one-eighth teaspoon of salt, ne-half teapoon of soda, two teaspoons of baking powder, and one-half teaspoon of nutmeg. Rub in one cup of cooking oil as for pastry. Take out one cup of mixture. To the remaining ingredients add one cup of sour milk and two eggs. Bake in a bread-pan putting the cup of material on the top of the cake just before beking. Do not bake too fast.

Put away all food and clean dishes. Salt and peppers, sugar bowls, etc., should be filled when taken from the table.

Grandmother's Pies *are done*

HOW *luscious* they look as she takes them from the oven. Here is a kind well worth your attention, made from dried apples, small raisins and brown sugar. "*Spring mince pies*" grandmother called them. She had many other delicious pies and pudding made from brown sugar —in fact she hardly used *any other sugar* for cooking.

Lantic
Old Fashioned Brown Sugar

is just like the sugar that Grandmother used to use. It comes in *Light, Brilliant* and *Dark Yellow*, but the *Brilliant Yellow* is about right for most of the things Grandmother made and for your own favorite brown sugar dishes.

You should keep brown sugar in your pantry and you should use it oftener. It has a delicious *characteristic flavor* essential to the success of many dishes. It is economical, too, costing less per pound than granulated.

If you don't know how to make Grandmother's good old-fashioned dishes, no matter. We have just printed a delightful new booklet called "*Grandmother's Recipes.*" It is devoted entirely to brown sugar goodies. Send for it to-day enclosing 2 cent stamp to cover cost of mailing and please add the name of your grocer.

Lantic Old-Fashioned Brown Sugars are made by the same firm that makes the famous Lantic "FINE" Granulated.

200 **Atlantic Sugar Refineries, Limited - - Montreal, Que.**

Preserves getting low ?

Tide over the winter with

CROWN BRAND CORN SYRUP

Everybody likes this delicious Table Syrup—and it's much less expensive than butter for the children to eat with bread.

At all Grocers—2, 5, 10 and 20 lb. tins— 3 lb. Glass Jars.

Write for free Cook Book. 33

THE CANADA STARCH CO. LIMITED, - MONTREAL.

SUFFERED WITH HACKING COUGH

COULD NOT SLEEP AT NIGHT.

The constant hacking cough that sticks to you in spite of everything you have done to relieve it, is a source of danger. The longer the cough stays, the more serious menace it is to your health.

It is easy to check a cough at the outset with Dr. Wood's Norway Pine Syrup. If you have let it run though, it takes a while longer to cure, but Dr. Wood's Norway Pine Syrup will cure it even then after other remedies have failed.

Mr. J. Henry Landry, South River, Burgeois, N.S., writes:—"I received such great benefit from Dr. Wood's Norway Pine Syrup that I cannot help expressing my thanks. I suffered with a hacking cough for over a month, and could not sleep at night. I used many kinds of remedies, but they didn't do me any good, until I used 'Dr. Wood's,' and found great relief right from the start. I only used two bottles, and was completely cured. I will never be without it as long as I live."

There are a number of substitutes on the market for Dr. Wood's Norway Pine Syrup, so when you ask for it see that it is put up in a yellow wrapper; three pine trees the trade mark; price 25c. and 50c., and that it bears the name, The T. Milburn Co., Limited, Toronto, Ont.

WHY SOME BOYS DON'T LIKE THE FARM

There are two sides to every question, and when we hear complaints about the boys of the age running away from the farm and flocking to the city, we do not always consider all sides, but only wonder at the whyfor of it all.

From one point of view it does seem almost unaccountable to forsake green pastures and running brooks, birds and wild flowers, peaceful and wholesome surroundings for the noise and confusion and bustle of city life. Before we criticize harshly or unknowingly, let us look below the surface and ascertain the real reasons.

If a genuine comradeship exists between a boy and his father, there is far less likelihood of his desiring to seek other avenues.

What justice is there in criticizing or blaming boys who have no privileges or rights in the home for running away from home or at least longign go?

Let me tell you of one father who takes every dollar that his boys earn up to twenty-one and banks it for himself, never allowing them any luxuries or trips or spending money.

"I'm mighty glad he is not my dad or Don's," remarked a bright, wide-awake, wholesome Toronto boy who was a guest of a neighbor of this penurious and exactnig father.

A sixteen-year-old son who was earning $1.25 a day for a neighbor during the season was only allowed 35 cents out of a check for $25 paid him by his employer.

Not alone that, but he was expected to rise at four-thirty and do the milking and part of the chores before and after his ten hours' work was done for his employer.

And yet his father is a well-to-do farmer.

Other farmers give a child a calf, colt or pig, which said child is expected to care for and permitted to think is his until sold when the father pockets the money.

Unless parents ylay fair and are just, how can they expect their children to be honest and fair and love their homes or farm life?

Under right conditions and with fair treatment farm life can be made most attractive in this day and age. It need no longer be mere drudgery and slavery, as it was looked upon by some of our ancestors.

A farm house today can be as up-to-date as a town place, with fifst class pulmbing, lighting and heating.

The automobile is as much in evidence in the country as in town and the auto tractor simplifies farm work.

HERE'S A HAPPY MAN

(From Chicago News.)

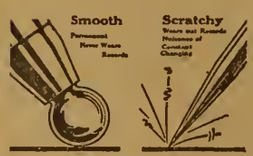
Why does nobody emphasize the joys of winter? Why don't we sit cozily in our homes and read Whittier's "Snowbound" until the tears of appreciation course down our cheeks? When Whittier says, "Boys, a path!" why don't we all shovel and enjoy the fun as the "hoary meteors" fall? The recent heavy snow is the best thing that ever happened. It saves the winter wheat from complete destruction and helps the wheat supply large for next year. Snow acts as a good fertilizer on gardens and farms and will increase the output next summer. Were it not for the big crops all of us would starve to death. Better that a few should freeze to death than that all should starve to death. People in the South live in wretched hovels because nature is bountiful and man moves along the lines of least resistance. Give me the snow, where a respectable germ can't live, where energy must be released continually if one is to keep warm. Give me rich Northern milk, where cream is thick as leather and a rich, healthy yellow. Give me in season Riley's "When the frost is on the pumpkin and the fodder's in the stock." Give me that glorious appetite for the Thanksgiving Christmas and New Year's of fat duck roast goose, chicken, stuffed turkey, roast pig and mince pie. With a warm fire, a cozy home and friends, snow is beatutiful.

THE PORRIDGE DIET

A great many people are deriving unexpected benefits from restricted war diets. Moved to lessen their consumption of food in the interests of the Allies, they are discovering that they have always eaten to much and that they are much better off physically and mentally when they eat a great deal less. This applies especi-

Those Wonderful Pathe Records

OWE their rich, full, natural tone to two things—a unique and secret method of recording, and their reproduction by means of a round, polished sapphire ball.



It should be evident to all that a *ball* of sapphire, jewel-polished under the microscope, and *fitting perfectly* into the half-circle of the sound groove, along which it smoothly, beautifully *glides*, is bound to produce a TONE of purer quality than that produced by a steel needle that becomes a jagged chisel before the record has revolved three times.

Hear these late Pathe Records

Remark their quality—compare them with the same selection of other makes—and bear in mind that every Pathe Record played with the sapphire Ball is guaranteed to play at least ONE THOUSAND TIMES. Can you afford to buy any other RECORD?

20276	Somewhere in France is the Lily —Thomas Conkey
	Daddy Found You Down Beside the Garden Wall—Harry McClaskey
20269	Arrival of the U. S. Troops in France —Russel Hunting
	Hail, Hail, The Gang's All Here —University Quartette
20266	It's a Long Way to Berlin—Fred Fairbanks
	That's What Ireland Means to Me —Harry McClaskey
20280	That' the Kind of a Baby for Me —Noble Sissle
	He's Always Hanging Around—Noble Sissle
70154	Le Prophete "Coronation March" —Gille Orchestra
	Midsummer Night's Dream--Wedding March —Gille Orchestra
20225	Over There - - - - Willie Weston
	Never Forget to Write Home —Irving Kauffman
25006	Love Here Is My Heart —Craig Campbell
	Within the Garden of My Heart —Craig Campbell

For full Catalogue ask one of the dealers listed below, or write direct to—

THE PATHE FRERES PHONOGRAPH CO. OF CANADA, Limited

4-6-8 Clifford Street - TORONTO, Ont.

Montreal Office: 1004 New Birks Bldg.

Remember—any disc machine can be equipped to play Pathe records at a nominal cost.

Good territory open to live dealers 11

ally to men of sedentary occupations engaged chiefly in mental work. The News knows at least two men who take nothing but a large portion of oatmeal porridge for their breakfast and whos luncheon generally consists of rolls and cofiee or tea.

These particular men eat a more substantial, but by no means heavy, evening meal, and they boast that never before did they enjoy such good health or spirits. It remains to be said that both are engaged in heavy brain work for from 10 to 12 hours a day. We know of a club man, who all his life long has been what may be called "a high liver" on two continents and who is amazed at the improvement in his health which has resulted from a lowered war-time diet. No general rule can be laid down which will embrace all kinds and conditions of people, nor can people engaged in hard manual labor get along without considerable strong food. The fact remains that in saving flour, beef, bacon and other edibles for our Allies in Europe tens of thousands of Canadians will reap dircet advantages in their own persons of which they did not dream.

THOMAS JEFFERSON'S TEN RULES OF LIFE

1. Never put off until tomorrow what you can do today.
2. Never spend your money before you have it.
3. Never trouble others for what you can do yourself.
4. Never buy what you do not need because it is cheap.
5. Remember that pride costs us more than hunger, thirst, ro cold.
6. One never repents of having eaten too little.
7. Nothing is ever troublesome that we do willingly.
8. The most pain comes from those evils that never have happened, except in our imaginations.
9. Take things alawys by their smooth handles.
10. When angry, count ten before you speak, when very angry count a hundred.

CRETONNE CUSHION TOPS

Perhaps you put off laundrying the cretonne covers because you dislike the task of ripping the seams to remove the cushions and then sewing them again. Try making your covers in another way.

Take a strip of crettone as long as the cushion and two and one fourth times as wide. Hem one end. With the wrong side out fold the material the size of the cushion and the other end lopped ever one fourth of the width. Stitch both end. Turn right side out, slip in the cushion and it will be held in place by the pocket formed by the exrta material.

PERILOUS RIDE

Four miners in British Columbia had a most exciting and perilous ride recently when they were carried 1,500 feet at breakneck speed on the tail-end of a snow slide in the Selkirk Mountains and plunged 250 feet into a chasm.

After the plunge they were buried in the snow, but managed to gain the surface after several hours of unceasing toil. They were hemmed in on all sides, and the walls of the crevasse rose sheer over them for hundreds of feet. In this condition they remained for nearly fifty hours When they were ready to give up, a rope from the heights overhead came dangling down from a rescue party.

Everybody Knows Dr. Chase's Receipt Book

"Ever since I can remember, this was the most valued book in the bookcase."—Mrs. S. Thompson, Smith street, Kingston, Ont.

"Mother has had Dr. Chase's Receipt Book for 20 years, and, I tell you, it is a good one."—Mr. John Miller, S. Salt Spring, B. C.

IT may be safely said, without fear of contradiction, that there is no more useful book to be found in any home than Dr. Chase's Receipt Book. The proof of this statement rests in the fact that several millions of copies have been sold, and it is sometimes said that the circulation is second only to that of the Bible.

From the time he began the study of medicine it was a hobby of the doctor to collect all recipes and prescriptions of exceptional value. There is so much of the doctor's own experience and history woven into these recipes that you cannot use his book without feeling that you know him personally and appreciate his sterling character.

The Receipt Book was soon widely circulated, and aroused so much favorable opinion towards the doctor that he found the demand for his medicines far greater than he could supply. This led to the decision to select a few of his most successful prescriptions and place them on the market for general sale.

This action met with some criticism from the medical profession, but Dr. Chase's motto was "the greatest good to the greatest number," and one cannot estimate the suffering alleviated and the lives saved by this generous action on the part of the doctor.

The use of Dr. Chase's medicines has become so general that there are few, indeed, who do not know something of their sterling merits. So enormous have the sales become that imitations have been put on the market and substitutes are offered by unscrupulous persons who seek to steal the reputation of their originator.

Dr Chase's Syrup of Linseed and Turpentine for Coughs, Colds, Hoarseness
Dr A.W. Chases
Worth $5 a box
Dr Chases Nerve Food
Dr A.W. Chase's Kidney and Liver Pills
Catarrh

But the doctor has protected you by having his portrait and signature printed on every box of his medicines. By taking care to see these on the box you buy you can be certain that you are getting the genuine.

The latest edition of Dr. Chase's Large Receipt Book, containing over 1,200 pages, will be sent, postpaid, on receipt of price, $3.75, by Edmanson, Bates & Co., Ltd., Toronto.

Dr. A. W. Chase's medicines are for sale by all dealers, or sent on receipt of price by Edmanson, Bates & Co., Ltd., Toronto.

2

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, post-paid, and put you in touch with women in Canada who will gladly tell what my method has done for them.

A MESSAGE TO WOMEN!!

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:

Mrs. M. Summers, Box 309 Windsor, Ont.

HOUSEHOLD SUGGESTIONS

A Scrubbing Box

Use an ordinary soap-box, remove the top and one side, tack in a padding about siix inches deep. An old cushion or piece of comforter is very good. A person can kneel in this and scrub or go over polished floors, and neither feel the effects of kneeling nor expose their skirts to the dust or water.

To Keep Scissors Sharp

Take a small bottle and use your scissors as though you were going to cut off the neck of it. Work the scissors form one end to the other until you have a good edge.

To Teach Children About the Germination of Seeds

,ake a drinking glass, line the inside with blotting paper and pour just enough water in the glass to wet the glass. Between paper and glass put seeds, a dozen different ones may be put in one glass. Soon they sprout a .d grow. The children can see each day just what the progress of the g owth is. The glass will fill with roots and the tops shoot above the glass. Keep paper wet.

Hints on Clearing the Table

Much labor, confusion and time may be saved by the busy housewife if she will use a little thought in clearing the dining table.

Neatness and order in the pantry depend on the way the table has been cleared.

CLEANING SEED

(Continued from page 342)

to the mill before treating—if none is available at the farm. Should, however, any smut balls appear on the surface of the solution when grain is being treated, it is necessary to remove them quickly. The smut balls are much lighter than the grain, and will rise to the surface when the latter is vigorously and repeatedly stirred. We have found, however, that the timie of treatment given to wheat or other grain is far too short to permit the removal of all smut balls rising to the surface. Even when prepared and working quickly, we have not sucoeeded in scooping off all smut balls that came to the top during treatment, under 10-15 minutes. This long exposure of grain will seriously affect the germination."

Various patent devices for making difficult separation, such as wheat from oats, wild oats from barley or wheat, vetch from rye, etc., are on the market, but these cannot be described here; neither can we go into the various combinations and gangs of sieves recommended by different firms for certain classes of work.

In cleaning cereals a large mesh woven wire sieve is usually employed as a topmost sieve to take out straws and the larger imprities which otherwise would clog the riddle and interfere with the separation it is intended to make.

Wheat.—A zinc sieve with perforations about 12, 13 or 14 sixty-fourths of an inch in diameter is generally used as a riddle. Such impurities as oots will often slide the length of such a sieve and fall off behind, while wheat tips on end falls through the perforations A number of these riddles with the same or approximately the same perforation is often arranged one above another. By this means an oat or a wild oat falling through a perforation is started again on the sieve below, and is ultimately run off behind.

Several types and sizes of sieves rae used in the lower shoe for cleaning wheat. The 8-64 or 9-64 perforated zinc, 7 by 7, 8 by 8, and 9 by 9 square mesh woven wire, and the 2 by 9, 2 by 10, and 2 by 11 long mesh woven wire are all in use. In deciding which sieve to use, the kind of wheat, nature of impurities, and object of the cleaning—whether for seed or market—must be considered. The buckwheat screen is sometimes used for the separation of wild buckwheat from wheat.

Barley.—The cleaning of barley requires similar although not identical sieves to those used for wheat.

Oats.—I ncleaning oats the most important sieve is the lower one. The size of the opening, its slope and shake should be such as to get everything smaller than the plump oats to pass through. A useful sieve for this purpose is made of zinc with oblong perforations. The size of the slits to be used will vary with the kind of oats. A variety with a large kernel will of course require a wider slit than one with slim kernels. The 5-64 by ½ may be taken as a standard. For very plump oatts the 1½ by ½ is about right.

Long mesh woven wire screens are commonly used instead of the perforated zinc. Square mesh sieves are used also.

Flax.—Flax requires on top a woven wire sieve such as the 3 by 16, 4 by 16, or 4 by 14, or a 1-16 by ¼ perforated zinc screen below.

To Get Proper Sieves for Cleaning Seed

Every farmer who has a fanning mill that will not clean his seed with the sieves supplied should send a sample of the seed to the manufacturer, asking him to send a sieve to do the work. No mill is equipped with sieves for every kind of cleaning; they are fitted for cleaning the average lot of seed. The farmer who is willing to pay for a sieve to clean his seed should be supplied be supplied with the sieve he needs.

It is to the interest of the manufacurer to have his mill do satisfactory work, and nearly all of them are ready to supply additional sieves for special work. If you cannot get what you require from the manufacturer, communicate with the Seed Branch, Department of Agriculture, Ottawa, and we may be able to help you.

New Sieves for Old Mills

In most districts in the older settled parts of Canada there are a great many fanning mills that were bought fifteen or twenty years ago. Many of these are still in good repair, but most of the sieves that originally came with them are lost or worn out. Of the firms who built these mills many are out of business; others are now building a mill of an altgether new model, and have not on hand a supply of frames to fit the old ones. Farmers who wish to order sieves for such a mill may use the following list as a guide in deciding what sieves to order. The list includes the sieves which will be found to be of most general use for the various purposes indicated, but before deciding finally what sieve to buy for cleaning a specific kind of seed read what is said about cleaning that seed above.

The seed laboratories at Ottawa and Calgary are prepared to examine samples at any time with a view to advising what sieves to use and where they may be obtained. For such examination samples of from eight to twelve ounces should be submitted. The sender should also state the kind of mill he has.

Red Clover.—Riddle, 1-15 inch perforated zinc. Screen, 4 by 24 woven wire for plump seed and for removing ribgrass; 4 by 26 or 2 by 28 for small seed; 20 by 20 for removing sheep sorrel.

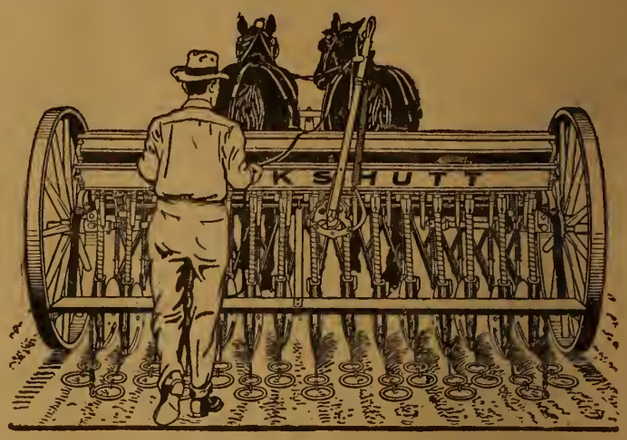
Alsike.—Riddle, ⅛ inch perforated zinc. Screen, 24 by 24 woven wire.

Timothy.—Rididle, 1-20 inch perforated zinc or 22 by 22 woven wire; 1-22 inch if upper shoe of mill can be

You Want Rapid, Perfect Seeding

There is one way to make sure of it, and that is, use a

Cockshutt Disc Drill



With its very strong frame construction—no sagging or bending of the parts. Both wheels are drivers—you sow on corners as well as in the field.

You may buy the best seed and keep your land in good shape, but if you don't PLANT your seed properly your crops will be thin, "spotty" and undersized. Cockshutt Disc Drills plant and cover all kinds of grain at any rate-per-acre you wish. They pulverize the ground, cover the seed and give it every chance for germination. Not a heavy draft machine, despite its tremendous strength. Built in five sizes with either 6 or 7 inch space.

Cockshutt Grain and Fertilizer Drills are wonderfully efficient though very simple and without complicated parts. Fertilizer is drilled into the ground with the seed and covered with it so a splendid, even crop, is assured. The flow of the fetilizer is under perfect control. The whole machine is worked by easy levers and it doesn't take long to understand it thoroughly from top to bottom.

The Cockshutt Disc Drill should be seen to be appreciated. Write for our free Cockshutt Drill Book today. State whether it is a plain grain Drill or a combination grain and fertilizer Drill you want information about. Our nearest agent will be glad to show you how it works.

THE FROST WOOD & CO., Limited,

Truro, N. S. **ST. JOHN, N. B.** **Charlottetown, P. E. I.**

Watson Triplex Sprayers

For Potatoes, Grain and Vegetables

Spray and increase the quality and quantity of your crop.

We have Sprayers for every use—from hand pump to the gasoline driven machine.

Write us for catalog and tell us about your spraying problems.

JOHN WATSON AND COMPANY,

HOULTON, MAINE, U.S.A.

given a short quick shake; 28 by 28 below for plump seed or for removing worm-seed mustard; 30 by 30 for smaller seed.

Wheat.—**Riddle,** 13-64 inch peforated zinc. **Screen,** 2 by 10 woven wire for chess; 7 by 7 for wild vetch or wild buckwheat, or buckwheat sieve for wild buckwheat.

Barley.—**Riddle,** 18-64 inch perforated zinc. **Screen,** same as for wheat.

Oats.—**Screen,** 2 by 10 woven wire, or 5-64 by ½ perforated zinc.

Flax.—**Riddle,** 3 by 16 woven wire. **Screen,** ½ inch perforated zinc.

Care of Mill

A fanning mill, and especially the sieves, should not be stored where moisture will collect on them. Many granaries are damp and sieves stored in them soon rust out. A good plan is to have a box in which the sieves can be put when not in use. If fitted side by side in such a case sieves can be easily got at without handling over the whole collection. Numbers plainly marked on the upper or outer edge of the frame make it easy to find any sieve required. It pays to take care of machines and other equiipment of the farm, and the fanning mill and its appliances are no exception to the rule.

Hints For Those Intending to Buy a Mill

Choose the mill that will produce the best grade of seed.

See that the mill is well made but do not over-estimate the value of its lasting qualities: a mill that will clean and grade well will pay for itself in a season or two.

The capacity of a mill in bushels per hour should not receive too much consideration. It takes only a few hours, even with the slowest mill, to clean all the seed used on the average farm for the season. Don't sacrifice quality of work for speed. Neither should the power required to run the mill be given too much consideration. Other things being equal, though, the easiest running mill should be chosen.

See that the sieves are well made and fit snugly into the mill so that there is no place into which weed seeds or grain may lodge.

The mill should be easy to clean out when changing from one kind of grain to another.

The ease and rapidity with which the amount of grain leaving the hopper can be controlled is an important matter. It should be possible to shut off or regulate the flo wof grain to the sieves with one hand while turning with the other. If one must stop turning the mill in order to close the hopper, the sieves become flooded and poor work results. It is an advantage for the person turning the mill to be able to see the work the sieves are doing.

Preference should be given to the mill with the simplest and best arrangement for bagging.

It is a great advantage to deal with a firm who will guarantee to see that the mill is fitted with the proper sieves to handle the grain for which it is required. When you buy a mill give the firm to understand you will send them samples of your seed and you will expect them to send the best sieves for cleaning it. If manufacturers would do this, only a few standard sieves need be supplied with each mill. A large collection of sieves supplied with the mill is not an advantage unless they are specially adapted for the work to be done.

FARMERS GETTING TOGETHER

(Continued from page 343)

farm and household questions so as to increase the efficiency and comfort of the farmer and his family.

(c) By promoting social intercourse and the study of economic and social questions through the holding of debates and lectures, the dissemination of literature, the establishment of libraries, and so forth; and by otherwise extending the knowledge of members and their families, with the view of elevating the standard of living in rural comunities.

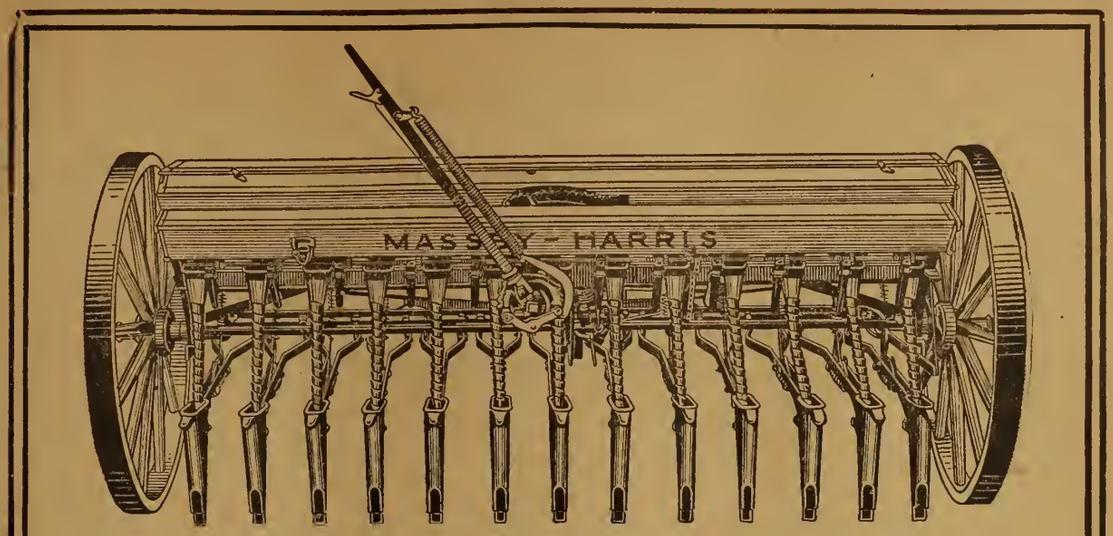
(d) By watching legislation relating to the farmer's interests, and by urging from time to time through duly apointed delegates or otherwise, the passing of legislation required to promote the best interests of Agriculture.

(e) By studying and teaching the principles of co-operation, and by promoting the establishment of co-operative organizations.

(f) By encouraging members to provide suitable halls or meeting places and properly furnish and equip the same for the social and educational benefit of the members.

(g) By endeavoring t o suppress personal, local, sectional, national and class prejudices and thereby to promote the best interests of Canada as a whole.

The Maritime Farmer has been asked to serve as the Official Organ of the United Farmers and has gladly consented to further the interests of the association. Future issues of this paper will contain information relative to the progress being made in organizing, together with particluars of meetings held, etc. Every farmer should carefully follow the progress of this institution. It is one worthy of the sympathy of those who believe that union is strength. The Farmers Union does not contemplate antagonism to any organization designed to benefit the farmers of New Brunswick. It is another step in the "get together movement" which is so much in evidence among the farmers in all parts of Canada. It should be a most useful institution in meeting the "after the war" problems, which will undoubtedly sonfront farmers, as they will affect all interests in Canada. Keep your eye out for the news of the "United Farmers."



The Drill which sows Your Grain as it Should be Sown

A GOOD START is half the Battle —sowing your grain with a MASSEY-HARRIS DRILL is a big factor in securing a good start of grain and a bountiful harvest.

Seed Time is approaching—Are YOU ready? Every day counts—delays are dangerous. Don't take chances with an inferior Drill, but get one which can be depended on to sow your grain right. Get a Drill with a reputation for Reliabilitity under all Conditions—It's better to be Safe than Sorry.

The Reliable Force-Feed Runs sow uniformly in any desired quantity and without injury to the seed.

Strong Steel Frame holds all parts in proper relation to ensure free action of all.

Reliable Force-Feed Run.

Positive Gear Drive.

Simple and easy control —one motion of a Lever lowers the Furrow Openers, applies pressure and starts the feed—the opposite motion raises the Furrow Openers and stops the feed.

MASSEY-HARRIS DRILLS are made in a wide range of sizes and with Hoes, Discs or Shoes. Grass Seed Boxes, when ordered.

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BEAN GROWING IN NOVA SCOTIA

(Continued from page 341)

ers and earlier than the Yellow Eye or Soldier bean. Among the pea beans are the small Snowflake Field bean, an early variety of excellent quality and prolific, the Prolific Tree bean, a bean somewhat larger than the Snowflake, and a somewhat large white bean called the medium pea bean. Pea beans are usuallq in good demand on the market and yield better on the poorer soils than do the marrow and kidney beans.

There is also a large white marrow bean, called the White Marrowfat, which has been grown successfully for a number of years near Milford, Halifax County. It is also grown to some extent in the Western part of the Annapolis Valley. This bean because of its white color and the plumpness of the seed and good quality is a favorite wherever it iis known. It is said to ripen fairly early, to be quite free form disease and an excellent yielder. The Agricultural College has a few bushels of this variety for sale for seed.

Fertilizing the Soil

Beans belong to a group of plants called nitrogen gatherers. They, in common with other members of their botanical family, the Leguminoseae, including peas, clover and vetch, have the power of getting part of their nitrogen from the free nitrogen of the air and of adding to the store of nitrogen in the soil. The result is that the bean crop may leave the soil richer in this important fertilizing material than it was before. It is well, however, to have a fair supply of nitrogen in the soil when the beans are planted, otherwise the crop will not get a good start or grow well enough to make much use of the nitrogen in the air. This nitrogen may be provided by plowing under a clover sod the fall before or applying a light coat of manure, say eight to ten tons per acre. If neither of these ways of adding nitrogen is convenient, a light dressing of nitratte of soda, say 50 to 100 pounds per acre, just after the plants are up will give them the needed start. Both clover sod and manure are valuable for the humus which they add to the soil, improving its texture and making it more retentive of moisture.

The plant food which needs to be added in largest quantities to most soils is phosphoric acid. It may be applied in the form of acid phosphate slag or bone meal. Sevey in his book on Bean Culture says: "It seems that phosphoric acid in the form of dissolved South Carolina- rock (acid phosphate) is more likely to give profitable results than the application of any other fertilizing material." If beans do not ripen early enough, or if they ripen unevenly, it may be due to a lack of phosphoric acid in the soil.

Potash is a useful fertilizer for beans on most soils but good results can be and are obtained without making special applications of this material to the soil. The usual commercial form of potash not being obtainable now, it would be well to save and apply whatever wood ashes can be got. Unleached wood ashes contain from 5 to 8 per cent of potash. Potash is also contained in well preserved manure. Some authorities claim that it may be set free from the inorganic material of the soil by the application of lime. Since soils differ greatly in fertility no definite recommendation as to the amount of fertilizer to be used per acre on all oils can be given. This would be a matter to be determined by the owner according to the character of the soil as to productiveness. Good bean crops can be grown by the application of phosphatic fertilizer, such as acid phosphate, slag or bone meal, 400 to 500 pounds per acre and a nitrogenous fertilizer such as nitrate of soda, say 50 to 100 pounds per acre, provided the soil is very well supplied with humus.

The Soil and Its Preparation

Beans require a warm, well-drained soil, and one which does not suffer from lack of moisture. The bean crop is particularly sensitive to external conditions and may readily fail with insufficient heat or with too much or too little moisture. Under the conditions of our climate, with its short growing season, the land for beans should not be too heavy or too cold. A light or medium loam with a southern exposure is more likely to give success than a heavy clay soil, especially if it has a northern slope or is poorly drained. The marrow and kidney varieties of beans are said to require slightly heavier and richer soil than do the pea beans. The latter will give heavier yields than the marrow and kidney beans on light and relatively poor soil. But in this Province where the natural conditions are not always most favorable for bringing a crop of beans to maturity the greatest care should be exercised in the selection of the most suitable soil and in its preparation.

Beans, may come in the rotation after clover, or they may come after potatoes or other hoed crops, provided there is sufficient humus in the soil. A clover sod provides humus in the soil. A clover sod provides humus and nitrogen. A hoed crop, such as potatoes or corn, leaves the soil in good condition for the preparation of a seed bed.

Beans to succeed best, require a continuous supply of moisture throughout the growing season. If the soil becomes very dry at a critical time it will greatly lessen the yield. The

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Pamphlet giving particulars of our courses of study, rates of tuition, etc., will be mailed to any address os application.
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grower can, to a certain extent, guard against this danger by preparing the soil so that it will absorb the maximum amount of rainfall during the dormant season and by practising proper after-tillage so as to retain this moisture as much as possible. Fall plowing is an advantage in that it makes the land earlier in the spring and puts it into a condition to better absorb and hold moisture. If the land has not been plowed in the fall it should be plowed and harrowed early in the spring, or at least three weeks before the time of planting. It should receive several harrowings at interval of a week or so in order to bring it into good tilth, to give the air admision and to retain the moisture and to kill as many weeds as possible before the beans are planted. If this work is properly done the beans will grow much better htan they otherwise would and it will greatly lessen the necessary tillage later. Much of the tillage for this and other hoed crops could be given before the crops are planted and would be done much more cheaply than after the crops are up.

Planting

Beans should not be planted until after settled warm weather arrives and danger of frost is past. In Nova Scotia they are planted from the first until the 20th of June. Some growers in the Annapolis Valley claim that the best results follow from planting during the first week in June. Beans are often planted too deep. In light soil they should not be covered more than two inches, in heavier soil one inch is enough. The rows should be placed 28 to 30 inches apart and the seeds about three inches apart in the row.

About one bushel of medium sized beans is reuired to plant an acre. Of the smaller kinds, such as the Snowflake pea bean, half a bushel is sufficient. One pound of the Early Yellow Six-weeks, a medium sized bean contains about 350 seeds. Planted four inches apart these would occupy about 176 feet of row. Probably to allow for loss by insects, diseases and accidents the usual recommendation is about twice this amount, or 1 uart to 162 feet of row. Usually beans are planted too thick and are not sufficiently thinned to allow the plants to properly develop. Having the plants too thick in the row favors the development of bean diseases and delays ripening. Plants of those varieties which grow to average size should be thinned to about 8 or 9 inches apart in the row.

Where the beans are grown on a large scale the planting is sometimes done by means of a grain drill, a sufficient number of tubes being stopped to bring the rows the right distance apart. Special bean planters are made for planting this crop. The ordinary garden seed sower may be used for small areas or the land may be furrowed our with a small plough and the beans dropped by hand and covered lightly with a plow or with a hoe. In small garden areas the drill may be made by drawing the corner of the hoe along a tightly stretched garden line and the beans covered with the hoe.

Cultivation should be frequent and fairly deep early in the season and shallower later in the season. Deep cultivation late in the seasou is liable to cut off or disturb the roots of the plants. Cultivation should be given only when the plants are dry, otherwise the spores of anthracnose will be scattered through the crop and much injury result from the disease. Usually about four or five cultivations are suffirient for the crop and many bean crops are grown with only two or three. When the soil has been thoroughly prepared so as to be in good tilth, moist and free of weeds, the bean crop can be and is sometimes grown without any cultivation.

Harvesting

In countries where the beans are grown in large areas they are harvested by bean pulling machines. In this Province they are pulled by hand and left in small bunches for a short time until thoroughly dry. They are then either stacked outside or hauled immediately under cover. When grown on a small scale, as in this country, they are thrashed by hand. If thrashed in the fall they should be spread uot and thoroughly dried before they are put into storage. The thrashing is often deferred until a convenient time in ithe winter. In this case the beans do not need so much care in drying before going into storage as whn thrashed earlier.

Yields

The average yield of beans is from fifteen to twenty bushels per acre. Occasionally a yield of from 30 to 40 bushels is obtained.

Antracnose

One of the worst diseases with which the bean grower has to contend is anthracnose. This is a bacterial disease which attacks the stem, the leaf, the pod and the seed of the bean. It produces an appearance on the bean like rust, but is not the same disease as bean rust. The disease may exist in the bean or in the soil and thus be carried over from the crop of one season to that of another. When infected seeds are planted the young plants from these seeds become diseased and from these diseased plants the infection may spread to the whole crop if the conditions are favorable for such spread. One good remedy for anthracnose is to plant clean seed on ground free from the disease and to cultivate the crop only during dry weather. If the foilage is wet from rain or dew the spores are readily sprad to healthy plants when worked among in hoeing or cultivating.

Hand selection of seeds in the ripened pod is the best way in which to get clean seed. Pods that show no trace of the disease should be chosen. It is conidered advisable also to select the longer pods containing the largest number of seeds in order to increase

A Truck for the Farmer

FARM equipment which will effect a time and labor-saving, and therefore a money-saving, must be carefully considered by every good farmer now-a-days.

The farm wagon, which for years was the most useful of all farm equipment, is now being replaced on the best farms by a sturdy, dependable motor truck. The truck will haul any farm product—fruit, grain, vegetables, stock, fertilizer, or wood—around the farm, or to the town or city many miles distant, in half the time, and at a much lower cost.

The Ford One-Ton truck is a rapid, economical and very serviceable means of transport. One of these on your farm will save you weeks of time in a single season and will enable you to pass through a crisis of labor shortage with less difficulty.

The Ford truck is supplied as a chassis only. This permits you to select any of the many body styles especially designed for the Ford truck and already on the market. Thus you can mount the one which suits your individual requirements.

Price $750 f.o.b. Ford, Ont.

See any Ford Dealer in Canada, or write for a catalog

Ford Motor Company of Canada, Limited
Ford, Ontario

Three of the many body styles that may be mounted on the Ford truck chassis

the productiveness of the strain.

The Horticultural Division of the Agricultural College will be able to supply a limited amount of seed beans of the earliest varieties to growers in 1918. Intending bean growers are advised to get their seed from the nearest source providing the beans are good and of the right variety. It is not the intention of the Department of Agriculture to interfere in the least with the regular trade but the object has been to save some of the best secd beans from being consumed as food by buying and holding these in reserve in case teh usual supply becomes exhausted. The beans at the Agricultural College will be available to seed merchants and dealers as well as to growers at cost price.

CARE OF MARES BEFORE FOALING

(Continued from page 363)

it can be avoided by attention and care.

Prior to the birth of the foal, mares should have enough of good wholesome food and water; plenty of exercise; clean, light and altogether sanitary quarters along with regular attention directed or given by a man who likes horses and who looks after this matter not from a sense of profit and loss alone. but because of human interest and duty.

On the average farm the problem of exercise is not troublesome. The great difficulty is to find help that will handle brood mares carefully. Brood mares may work up to within two or three days of the date of foaling, and be benefited by it. They should be given moderate but steady work. Such mares should not be given work which requires backing heavy loads, or where there is a chance of slipping. But they can and should be wroked.

Feed for this class of horses should always be of the best quality and of such a composition that it will not cause digestive trouble. As a geenral rule mares doing light work should eat approximately ten lbs. of hay and one lb. of grain per day per 1000 pounds live weight. This matter should be governed, however, by the condition of the mares and they should be gaining in condition with digestion in the best of condition as the critical time approaches.

Mares should be given a box stall at least four weeks before they are due to foal, in order that they become accustomed to it, and may also have a place large enough to be comfortable during the night. The stall should at all times be kept clean and well bedded, but particular care should be taken regarding these details when the foal is born. If truly known the source of navel trouble in foals is generally a dirty stable or yard. As a safeguard against "navel disease," besides the scrupulously clean stall, the navel should be tied and treated with a strong disinfectant, such as a solution of carbolic acid.

If the season of the year and other existing conditions permit, mares may well be allowed to foal on grass which lessens the danger of infection.

KEEPING BREEDING RECORDS ON FARM

(Continued from page 351)

have seen them with simply the date and day without the day number. These day numbers help a great deal in detremining the end of the gestation period because with them you simply have to add the number of days in the gestation period instead of counting each page as would be necessthy without the day numbers. The standard which holds the pages that can be used year fater year costs from 75 cents to $1.00. The filler, or pad, costs 50 cents for each year. That may seem a little expensive but if it is the means of saving one pig the profit on the one pig will keep you pads for the next ten years.

Besides keeping breeding records other dates of importance can be indicated. The dates of maturity of notes can be inidicated on the proper date and prompt settlement can be made. This will establish credit with your banker. Dates of sales that you wish to attend can be indicated. In fact, a complete and useful diary can be had year after year if one cares to set down important events from day to day. These calendars are necessary equipment to a business man in the city as as we farmers are being more and more regarded as business men we shrould endeavor to encourage the idea by using business-like methods.—C. H. GREEN.

THE HOME VEGETABLE GARDEN

(Contineud from page 347)

heavy shade, such as corn, should not be where they will shade small sun loving plants. Potatoes and sweet corn need about the same amount of space and will go well together. Cucumbers, squash, etc., should be grouped. A variation in the type of soil will decide to some extent the location of certain crops. If part of the land is low and moist it should be devoted to such vegetables as celery and onions. If part is high, dry and warm, that is the place for early crops.

The secret of obtaining large quantities of vegetables from a small area lies in the fact that in some cases two crops may be grown in one row at one time, for example, lettuce and radish parsnips and lettuce, corn and pumpkins, lettuce and early cabbage, etc. Also, that as soon as an early crop is harvested it may be replaced by a crop which will be ready for harvesting before the fall frosts. This is called successional planting, exapmles of which are, peas, early beets, radish and lettuce, to be followed by turnips, beans, carrots, cabbage, cauliflower, late beans or tomatoes. The mistake is often made of sowing the different vegetables only once, whereas two or three plantings of the same vegetables made at intervals of 10 days or so will extendthe season for them. This result may also be partially obtained by planting at the same time varieties dieffrering in the time they require for maturity.

What vegetables to grow, varieties to select and seed required, will be considered in the next article.

"Give up hoping that this can be a short war. Plan and provide for an ever-receding duration of at least two years more.

"If we all do so, peace may one day surprise us. If we do not, there will b eno peace and no freedom, but only a postponement.

"There must be no postponement and no 'next time.'"—Sir Eric Geddes.

Work your hens hard for all the whole grain they get by scattering it on the floor—in the ilter is so much the better.

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THE TEST
68 lbs. to the square inch under hydraulic pressure is the test that "Bob Long" overalls have been put to. Their strength is in the tightly woven fabric.
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Insist on "Bob Long" brand. Ask your dealer for Big 11—the big grey overalls—the cloth with the test.
91
My Dad wears 'em.
Known from Coast to Coast
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THE WHITE-MARKED TUSSOCK MOTH

A severe outbreak of this insect next summer is indicated by the large numbers of white egg-masses spotted over the trunks and branches of shade trees in many of our eastern towns and cities. The habits of this injurious insect and the most effective methods for its control are discussed in Circular No. 11, recently issued by the Entomological Branch of the Department of Agriculture, written by Messrs. J. M. Swaine and G. E. Sanders.

The species is native to this country and occurs periodically in extensive outbreaks, particluarly in the regions bordering the Great Lakes, the St. Lawrence River and near the Atlantic coast. It is notably a pest of cities and towns, but is injurious everywhere to shade trees in times of abundance; and it is also an important enemy of apple trees, since, in addition to defoliating the trees, the caterpillars feed upon and destroy the young fruit.

The details of the control methods as applied to both shade trees and apple trees are discussed in detail in the circular. Copies of this circular may be had free on application to the Publications Branch, Department of Agriculture, Ottawa, and requests for the circular may be mailed free. All inquiries regarding insect pests should be addressed to the Dominion Entomologist, Department of Agriculture, Ottawa, and no postage is required on such letters.

A TRANSFORMATION

"Mr. A. C. in 1915 sold some poor cows again in 1916 he sold his five poorest; he has fed better, has put in a silo, and has a good sire. From being one of the poorest dairymen in the section he will now rank among the best." So writes a keen observer of dairy progress in Quebec.

From a yield of 3,021 lb. milk in 1915 the above dairyman increased the production of ten cows to 6,246 lb milk and 236 lb. fat in 1917.

How did he know which cows to keep, which cows to sell? The answer is very simple. He kept dairy records weighing the milk of each cow night and morning every tenth day right through the lactation period, so that there was no mistake about it. He also found that it pays to feed well and grade up.

Consider that milk yield a moment; from three thousand up to over six thousand pounds, doubled in three years; what a transformation. That's real encouragement, better returns for labor, more cash, more home comforts, more real use to humanity.

Yes, of course his experience can be duplicatetd. Just write to the Dairy Commissioner, Ottawa, for milk record froms, they are free, and get started weighing right away, as soon as the first cow freshens.

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NEPONSET PAROID ROOFING — NEPONSET TWIN SHINGLES

Every Farm Needs Paroid

PAROID should roof every building on the farm—from the big barn to the pig pen and poultry house. It pays in dollars and cents—first, because of the vigorous resistance to rain, wind, heat, cold and fire; second, because of the many years Paroid lasts.

NEPONSET
Paroid
ROOFING
Saves You Real Money

Do all your roofing or roof-repairing this year with Paroid—made in Grey color—two weights; also with Red or Green crushed slate surface.

But be sure the roll roofing you buy IS Paroid! Some people have the idea that any roll roofing is Paroid. If you don't get the genuine article you pay for your mistake.

Look for the Paroid roll as shown. Sold by hardware and lumber dealers.

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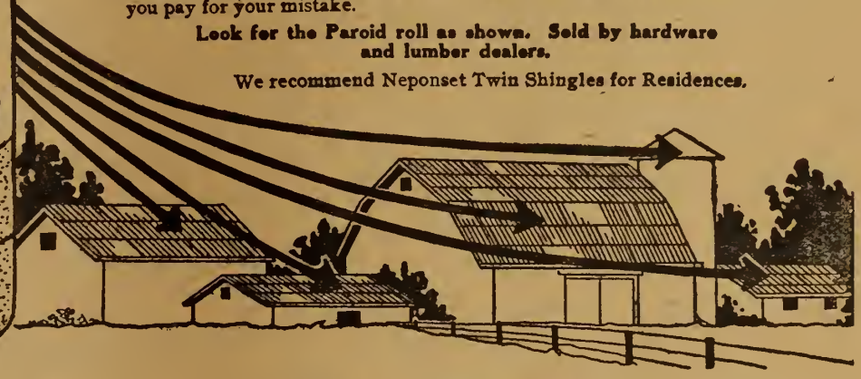

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Thirty-One Cents an Acre!

At Brandon the Happy Farmer demonstrated its ability to plow an acre in 45 minutes at a cost of only 31 cents worth of coal oil! Compare this with the cost of plowing an acre with your best team, with feed at high prices, and men's extra time to be counted in. Will it not pay you to use the

Happy Farmer Tractor

Model A—8-16 Horsepower. Model B—12-24 Horsepower.

Here is the ultimate tractor for efficiency and economy combined! It is famous for its simplicity—few parts to get out of order. Any intelligent farm lad can run it. It is heavy enough for the hardest plowing test and for heavy hauling—light enough to use with the drill. And it will go anywhere; it will plow right up to the fence with no unfinished corners. It will turn in its own space and not mire in soft spots.

Model B's engine is not just "adapted" to coal oil. It is designed *specially* for kerosene. It burns it perfectly—all of it—with no smoke nuisance and no carbon trouble. Model B will not only pull the plow and the binder, getting your work done early in critical times, but it will deliver 24 horsepower for all kinds of belt work at low up-keep cost.

If you prefer a lower power tractor, Model A supplies the need.

Write us for full particulars about price, delivery terms, etc. Literature free on request.

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Tried, Proven and Endorsed

The Government of Canada, realizing the increasing difficulties which the farmers of Canada are facing through labor shortage, have carefully examined the help problem on the farm with the idea of eliminating extra work and drudgery.

Here is the Government's answer to every farmer and dairyman: "A partial solution of the labor problem is the milking machine."

Empire Milking Machines have been used for over three years on the Government Experimental Farm at Ottawa,—and in view of their past performance, the Dominion Government has now placed an order for six more Empire outfits to be installed on the following Experimental Farms: Fredericton, N. B., Lennoxville, Que., Cap Rouge, Que., Ste. Anne de la Pocatière, Que., Lacombe, Alta., Brandon, Man.

EMPIRE
MILKING MACHINES

Actions Speak Louder Than Words

Empire Milking Machines are a good investment as they enable one man to do the work of three hired men in the same time. A boy can operate an Empire with ease.

Empire Milking Machines can be installed and operated at small cost,—the initial investment soon being paid for in time and labor saved.

The cost of operating an Empire for one year is just a fraction of the cost of boarding the hired man, aside from his wages—in one year, your saving is enormous.

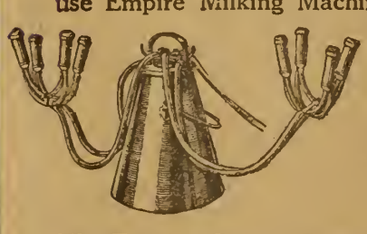
Empire Milking Machines milk in Nature's way. The action of the teat cups is that of the sucking calf, massaging the teats from tip to udder, gently and uniformly—the same way at every milking.

The experience of thousands of farmers and dairymen is: that cows and heifers take readily to being milking by an Empire. The soft, gentle massaging of teat cups sets up a pleasing sensation which causes the cow to give down readily and stand content while being milked. Empire Milking Machines will lengthen the cow's period of lactation.

Empire Milking Machines are easy to care for. Simple in construction, these machines do their work with speed and efficiency and can be operated by man, woman, boy or girl.

We know of no Empire Milking Machine that is not giving absolute satisfaction and doing all we claim it will do.

Dozens of other farmers and dairymen, just like yourself, use Empire Milking Machines and cannot say enough in their praise of the machine and its value to them.



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ASK FOR CATALOGUE 11

The Empire Cream Separator Co. of Canada, Limited

MONTREAL. TORONTO.

On March 6, 1918, the Dominion Government ordered six more Empire Milking Machine outfits.

Exact Copy of Government Circular issued to Farmers of Canada.

Dominion Experimental Farms.

J. H. GRISDALE, B. Agr. — Special Circular No. 13. — GEO. W. MUIR, B.S.A.

THE MILKING MACHINE

A PARTIAL SOLUTION OF THE LABOUR PROBLEM

They will take the place of that extra hired man so hard to obtain at the present time. *Unlike that hired man they are always there ready for work.* Their work is noted for its uniformity from day to day. Milking machines are now recognised.

AS A GOOD INVESTMENT

One man with a milking machine can milk twenty to twenty-five cows per hour. This number would take three men at hand milking. The real drudgery of the dairy farm is eliminated by the use of the milking machine.

INTRODUCTION The object of this circular is to put before the dairy farmer the value of the mechanical milker under the present conditions of labour on the farm.

There has been in the minds of many dairy farmers a great deal of prejudice against the use of a mechanical milker, but the present is no time to let prejudice stand in the way of increased production.

Every dairy farmer with a herd f 12 or more cows should consider seriously the installation of a milking machine.

The experience of an ever-increasing number of practical farmers, coupled with that of a number of our Experimental Farms and Stations, goes to prove that these machines are decidedly advantageous.

COST OF INSTALLATION The average cost of installation, taking into consideration the five most popular machines on the market, would be about $500 for an outfit to milk four cows at once.

Such an outfit would be large enough for a 25- to 35-cow herd.

For a 20-cow herd a 3-cow outfit would be sufficient. For a 12- to 15-cow herd a 2-cow outfit would be sufficient.

For each reduction of one unit in the installation there will be a reduction of approximately $100 in the cost price.

This briugs the average cost price to $16.60 per cow for the large herd; $20 per cow for the medium-sized herd; and $25 per cow for the small herd.

This in turn goes to show that while the cheapest installation for work done is with the large herd, nevertheless the first cost is not excessive in the case of a small herd.

COST OF OPERATION The annual cost of operation for a 25- to 35-cow outfit, including repairs, power, labour in caring for engine and washing machines, interest on investment, and ten per ceut depreciation on machine, would amount to approximately $225.

The above is approximately one-third of what the farmer is at present paying his hired man, where board is not taken into account.

Divided between 30 cows, this brings the running expenses to two cents per cow per day.

ABOVE COST COMPARED WITH COST OF HAND-MILKING The average hired man will not milk more thau seven cows per hour, which, at 25 cents per hour, costs 7.2 cents per cow per day for hand-milking. One man with a milking machine can milk 20 to 25 cows per hour, which brings the total cost of machine-milking, including the above-mentioned daily running expenses, to 4.5 cents per cow per day.

This is a saving of considerably over one-third and in a large herd would enable the farmer to dispense with a least one, if not two, men, or it would liberate these men for other important lines of increased production.

It also enables one man to milk many more cows than it is physically possible for him to milk by hand.

UNIFORMITY IN MILKING Not only does a machine decrease the cost of milking, but it gives uniformity in milking. All cows are milked in the same manner every day, and every good dairy farmer kuows this is important and that it is hard to obtain with the general run of farm hauds.

RELIABILITY OF SERVICE A machine when properly installed and equipped with a reliable source of power is always there ready for work.

Breakdowns are comparatively rare and usually easily remedied.

Wear and tear is not excessive, considering the nature of the machiue, and provided the latter is given proper attention.

EFFECT ON COWS A machine that is properly adjusted and handled will not injure the cow's teats or udder any more than the average farm hand.

Three years' experience of mechanical milkers on the Central Experimental Farm does not show that the cows dry off any more quickly than when milked by hand.

There is no more, if as much, objection to the milking machine on the part of the cows than there is to hand-milking.

Old cows used to hand-milking object most, and may not let down their milk readily, but heifers take to machine milkiug like ducks to water and require hardly any stripping.

Stripping by hand after taking the machine off is advocated by all users, as well as makers, as a precautionary and economical measure.

EFFECT ON QUALITY OF MILK If the machines are properly handled in the barn, and likewise properly washed in the dairy, the milk produced will be as good, or better, than that produced by hand-milking.

Where extra pains are taken with the machines and the care of the milk a very high grade of milk can be produced.

Careless handling results in bad milk and ultimate failure of the machiue.

IMPORTANCE OF EFFICIENCY IN OPERATION Last, and of far more importance than the cost price or make of the machine, comes the question of the efficiency of the operator.

Handling the machine is a job for the farmer, his sou, or some hired man who has an interest in the success of the machine and the cows.

For best results the operator must be quick and quiet, with an eye for details.

Know the machine and the cows, and adapt the one to suit the other, giving each their proper share of attention at the proper time.

Any of the more prominent makes of milking machines upon the market will do good work provided they are properly handled.

The addresses of the dealers or manufacturers of the various machines can be procured from the farm journals, or upon application to the Animal Husbandry Division, Experimental Farm, Ottawa.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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N. B. Farmers and Dairymen in Annual Session

The forty-second annual convention of the New Brunswick Farmers' and Dairymen's Association was held in the City Hall. Fredericton, on March 12, 13. 14 and 15th.

Isaac W. Baird. the President, occupied the chair.

Never in the history of the N.B.F. & D. A. was there such a well attended series of meetings and never did the various delegates get down to work so seriously as they did this year.

Increased food production to help win the war was the dominating factor in nearly all the addresses.

The reports submitted by the various County Vice-Presidents were brim full of assurances re the willingness with which the agriculturists of every County in the province are preparing to do their utmost during the coming season so that there will be enough food and to spare.

The President's address was brimfull of sage council.

The delegates were given a cordial welcome to the city of Fredericton by His Worship Mayor Hanson in a neat and to the point address.

H. H. Smith, the silver tongued orator of the Association, replied in a few well chosen words and then the Convention settled down to listen to a practical address by Hon. J. F. Tweeddale, Minister for Agriculture, who dealt in a forceful manner with present day probems from the agriculturists point of view, in connection with winning the war. The Minister has been very active in endeavoring to get as many farmers and farm laborers granted release from militiary duties to grow the food that can and must be produced here. He has been in conference with the premiers and ministers of agriculture of the respective provinces of Canada at Ottawa and is fully impressed with the fact that labor and increased production are inseparable allies. The question of politics does not enter into conferences of this kind. Every one must put their shoulders to the wheel and produce food to the exclusion of the question of profit. The farmers of New Brunswick must produce to keep our soldiers going. Our soldier boys have and are giving up all that was dear to them in life and their future prospects to safeguard us against such ignominy as the enemy has perpretated in Belgium. Were it not for the grey monitors of the British navy that daily stand guard over the entrance to the Kiel Canal there would have ere this been ravages committed on our fair shores similar to those in long suffering Belgium. The Minister outlined some of the activities of his department and placed himself on record as being open for an interchange of ideas.

Dr. Keirstead, Provincial representative of the Canadian Food Controller followed with one of the most masterful addresses that was ever presented before the N. B. F. & D. A. He pictured conditions as they exist and are liable to be for some time to come. As the eloquent doctor drove his argument home point by point he carried his audience to heights of enthusiasm that omens well for the food production campaign during the coming season.

The reports of the County Vice-Presidents were read and filed for future reference, after which the President named the committees and the meeting adjourned at 11 p. m.

The Wednesday Sessions

"Sheep Raising and Co-operative Marketing of Wool" was the subject of a well prepared address by Thos. Hetherington. B. S. A., Live Stock Superintendent for N. B. Mr. Hetherington had a thorough grasp of his subject and was closely followed with keen interest by the audience. He explained the co-operative marketing of wool plan which is being heralded in every section of the province with a view to secure for the farmers the best known facilities for disposing of the wool clip at the best possible prices. There will be a centre at Moncton and another at Fredericton during the coming summer and wool growers who have their own best interests in view will plan with their neighbors to market their wool through the co-operative associations.

J. Thompson, of the Sheep and Goat Division, Ottawa, also talked co-operative marketing of wool.

A. C. McCulloch, B. S. A., Poultry Superintendent for New Brunswick, delivered an excellent address on Poultry Raising, in the course of which he gave some very practical suggestions which, if followed, will mean a great increase in the poultry products and the money derived therefrom on the farm.

On Wednesday afternoon C.L. Smith of Woodstock, accompanied by several other farmers, were present as a delegation to make announcements re an organization which they have organized in Carleton County along the same lines as the United Farmers of Alberta and kindred associations. Their aim is to make the society province wide in scope and finally to link up with similar organizations from the Atlantic to the Pacific. More co-operation is their aim and their motto is "Equal Opportunities for All."

The delegation was favorably received and before leaving the hall they were tendered a unanimous vote of thanks for the work they are doing.

The remainder of the afternoon was taken up with addresses and discussions on Fertilizer Facts and Falacies by B. Leslie Emslie, Ottawa and a report on Co-Operative Test Plots of Potatoes by J. R. Brownlee, Dominion Plant Disease Inspector, Fredericton.

G. C. Cunningham, B. S. A., Plant Pathologist, was heard for a short time on the question of Potato Diseases and Seed Disinfection. The foregoing addresses were timely and the great number of questions asked evidenced the interest the farmers took in these subjects.

Breeding and Feeding of Dairy Cattle was the subject of one of the best addresses ever delivered before the Farmers' and Dairymen's Association. The subject was ably dealt with by Prof. J. M. Trueman of the N. S. A. C. Prof. Trueman is always sure of a hearty welcome by the New Brunswick farmers who appreciate the practical suggestions he usually has to offer. We believe some of the suggestions offered by Prof. Trueman will long be remembered very advantageously by the delegates.

A. J. Gaudet, of the Cow Testing Association, spoke to his compatriots in French for a short time, after which J. D. McKenna, Manager of the Maritime Farmer, Sussex, spoke in no uncertain tones on the subject of co-operation. Mr. McKenna has been doing good work in securing cheaper feeds for the farmers of the Maritime Provinces. He has not, however, found it altogether easy sailing and he has had to fight the combines that so frequently hamper co-operative movements. He has interviewed the Food Controller's staff and other men in authority with but little success. He persisted in his efforts until finally the importance of the cause he agitated received recognition and as will be noted in an extract from a letter recently sent to Mr. McKenna by the Food Controller, which we published in our last issue, the time is near at hand when the farmers of the Maritime Provinces will have to thank Mr. McKenna for a redress they long looked for but hitherto were unable to obtain with any degree of certainty.

The Thursday Morning Session

Mr. McLane of the Entomological Branch, spoke for a short time Thursday morning. He referred to the losses that insect pests occasion in this province and offered any assistance from his department in suppressing these pests. He advised farmers to notify him when any insect pest put in an appearance in their respective communities so that steps towards control might be taken.

W. R. Reek, Deputy Minister for Agriculture, spoke on the question of Greater Productoin and outlined some of the main ways in which farmers who are short handed on labor may accomplish good results by being long headed. Plan and prepare early so that there will be no delays when the soil is ready to work and sow was the key note of his address.

Prof. Grisdale and a number of farmers in the audience took up the discusson and many practical suggestions were presented.

The Resolutions Committee reported on the following resolutions which were adpoted:—

* * *

Resolved that the Legislature of the province be asked to amend the Act relating to the Protection of Sheep from Dogs so that all parts of the province, not included under the presnet Act, such as towns and cities, be placed under the existing taxation clause and further that all dogs be securely confined or tied from sundown until sunrise.

The foregoing resolution was accompanied by a widely ciruclated and signed petition from residents of the parish of Moncton.

* * *

Resolved tht this Assocition wishes to extend to the Department of Agriculture their hearty appreciation of their work on behalf of the people of New Brunswick. We also wish to express our faith in Mr. Reek as Secretary for Agriculture feeling that he has alredy proven himself to be the right man in the right place.

Further resolved that we, as farmers of New Brunswick, pledge ourselves to co-operate with the Department of Agriculture and to assist them in every possible way in carrying out their all-important work.

Moved by L. M. Anderson.
Seconded by H. J. Allen.

* * *

Whereas an agitation known as Daylight Saving is being promulgated and believing that such a scheme is not in the best interests of the Province in general and the farmers' in particular by making it almost impossible for them to procure adequate labor that will work during the hours when best results can be accomplished on the afrm; therefore resolved that this New Brunswick Farmers' and Dairymen's Asscoiation, at Fredericton assembled place ourselves on record as being opposed to such legislation.

Moved by W. H. Huggard.
Seconded by R. E. Floyd.

* * *

Resolved that this Association believes it to be in the best interests of both producer and consumer of dairy products to immediately upon the conclusion of the war, rescind the present Order-in-Council which allows as a war measure only the importation, manufacture and sale of Oleomargarine in Canada and respectfully petition the Federal Government to again put into force the restrictions against oleomargarine as they appear in the Dairy Industry Act.

Moved by Jas. Bremner, Jr.
Seconded by W. H. Huggard.

* * *

Whereas the Department of Agriculture of New Brunswick has offered to procure tractors for the farmers of this province at a cost of about $800.

And whereas this price is beyond the reach of the ordinary tiller of the soil and not practicable on the average farm,

Therefore resolved that this convention of Farmers and Dairymen urge upon the Government to fall in line with that of Nova Scotia and give a bonus of 25% on all gang plows bought and thereby help the great majority of farmers on the work for greater production.

(Continued on page 378)

Save Canada, Britain and Her Allies

Tremendous Increase in Production Needed

There never was a time in Canada's history when it was so essential in her citizens to become directly interested in the question of food production. Every man, woman and child in Maritime Canda are interested either directly or indirectly in the food production problem. The number of those who are indirectly interested should become directly interested this season to the exten of assisting whenever and wherever the occasion presents itself.

This is no time for idle quibbling. It makes no matter what a man's occupation, creed or political affiliation, his duty is to work with might and main for the common cause. The ridiculing of earnest effort to be of service to the Empire in this "Win the War" movement is nothing short of pro-German. Any attempt to sow dissentions or to foster a lack of confidence in men who are directing affairs of this kind honestly and well, by parties who have a political game to play is a dastardly move. The German nation has been able to defy the world up to the present time because her people are united in their efforts for their comon cause. Internal dissentions have proven disastrous in Russia. We have had disturbances in Canada as well as in other parts of the British Empire that do not help but rather hinder our success.

The call comes to us urgently and insistently to produce so that there will be enough food and to spare when the year' harvests are garnered.

If we grow no more and eat as much there will be privation and again privation, imperilling our cause and weakening our people. There is not enough food in sight or possible of production to let us be free from dangers of famine before 1920. We face a situation that is simply appalling.

The Maritime Provinces are asked to crop at least 400,000 additional acres during 1918. To succeed in this every pair of hands is needed. The man who cannot use the whole of his time to attain this objective should plan to give at least a part of his timo.

In order to attain the foregoing objective Dr. Jas. W. Robertson, Chairman of the Dominion Food Production Committee, in the course of his organization tour in the Maritime Provinces met the members o fthe New Brunswick Legislature and representative delegates from all parts of the Province in the Legislative Assembly Hlll, Fredericton, on Tuesday, March 26th, when he delivered his message to the farmers of New Brunswick.

In introducing Dr. Robertson, Hon. Mr. Tweeddale, minister of agriculture, said:

"I am sure the members of both sides of the house will welcome this opportunity of hearing Dr. Robertson, whose mission here is in consequence of the wide knowledge he has of the conditions resulting from the war.

"No man in Canada is better qualified to deal with the subject, because of the wide knowledge he has of conditions, having personally visited the trenches, and having seen and studied the devastation saused by the ravages of war in the town and villages, as well as in the agricultural districts of France and Flanders.

"Since about a year ago those reponsibe for the successful conduct of the war began to realize that the food situation was one of the most serious problems of the war. We were then asked to put on a campaign to bring the people of the province to a more intelligent knowledge of the existing conditions, and at once organized the province by inviting prominent men from every county to a large convention in this city. A ofrceful appeal for greater production was read from the pulpits by the clefgy of the province. A provincial committee was appointed at that convention, and has been working in harmony. This committee has done godd work and is a standing committtee today, making considerable sacrifice of their valuable time and energy.

"Subsequcntly we learned that while the British government wished to conceal from the enemy that they were weak in the matter of food supply it becamc necesary to make it known, in order to remedy the condition, and word was passed along from the imperial authorities, that the fighting forces in the trenches threatened to lay down their arms as the civil population, their families, were starving.

"Immediatetl the wheat from the elevators of Canada and the United States was rushed to the nearest port of shipment, and as fast as bottoms can be secured, is being sent overseas, so that, before it grows again, there may not be a pound of wheat left ot the surplus. The provincial department of agriculture at once summoned the municipal councils asking them to so-operate, believing that the situation was so serious that all public bodies should assist, that with the other provinces working along the sme lines, the weight of the nation would be thrown into the work.

"It is estimated that five times the surplus produced in Canada and the United States will be required next year to sustain the fighting forces at the front, as well as the civil population cf the Allies overseas.

"Conventions were called at Ottawa asking the premiers and ministers of agriculture from the provinces to meet to get an interchange of ideas, so they would be enabled to determine on an intelligent policy.

"Increased production involved labor supply and, a committee of the convention in making up that upply, ecommended that farmers and farm laborers of the draft under the military service act, should be given leave of absence, so long as they are engaged in farm work. In accordance with that recommendation the government established a leave of absence board with one agricultural representative who are now in session passing upon the claims of those claiming exemption under the order, in the city of St. John.

"It was also suggested at the conference that the Dominion government should make a money appropriation to assist the provinces in their expenditures, in carrying out the work, which was done, and the appropriation was made $25,000 being the amount granted this province. This will be explained by Dr. Robertson, whose business here is to organize the work, acting for and in the interest of the Dominion government."

Robertson's Address

Dr. Robertson spoke as follows:

I thank you for the opportunity of this occasion, I am here as the representative of the dominion minister of agriculture and the Canada food board to co-operate with the provincial authorities in completing definie plans for an immensely greater production of foods in New Brunswick in 1918. This is necessary to help save the situation which is becoming so serious as to threaten disaster to the cause for which we are fighting. Before this representative gathering mine is a simple duty. I do not regard it as a light duty or one easy to discharge. I am not to persuade you or to stir your emotions or attempt to deepen the fervor of your devotion to patriotic causes. I am to serve you and the people of New Brunswick by helping you to understand and again to understanad that the scarcity of suitable foods has made the war situation exceedingly grave on the side of the Allies. The shortage is most severe in Italy and France. In 1917 the yield of wheat in France was only about forty-seven per cent. of the average quantity obtained annually before the war broke out. The same was true of the crop of potatoes. The yield of all food stuffs in France in 1917 was estimated at only sixty-two per cent. of the yield of a normal year before the war. France and Italy are short of wheat and fiour and fats. Great Britain has been sharing her imports with these two allies while the scarcity is still greatest in France and Italy, the allowances of foodstuffs in the United Kingdom have been greaty reduced. Beef and mutton have been cut down to fifty-five per cent. of the pre-war consumption and wheat to about fifty per cent. Bread is kept cheap as a war measure although the quantity is down to the bare sustenance limit.

Bread in Britain Cheap But Scarce

Gerat Britain has provided cheap bread for the people in all her towns. How does she manage to do it? She buys our flour and wheat and pays the prevailing high prices; and yet in England you can buy bread for 4½c. a pound, while in Ottawa you cannot buy it for less than eight. Therefore, says the every ready critic of food control, "We are suffering from profiteering all along the line in Canada." That is not a just conclusion. It does not tally at all with the facts. England buys our wheat an has it ground in mills which she control. She mixes the flour with fifteen per cent. or twenty-five per cent. of rye or corn, or barley; and then sells that diluted flour to the bakers at a price which allows them to sell bread at 4½c. a pound, and requires them to sell it at that price regardless of the cost to the government. The government subsidizes the bread industry from the public revenue as a war measure in order that the proper people may obtain cheap berad. The cost to the British treasury was estimated at $200,000,000 last year.

The Allies Look to Canada

The equirements of the Allies, for 1918, of the five cereals or their products—wheat, barley, oats, rye and Indian corn—amount to 360,000,000 bushels more than they required to import before the war. That quantity is equal to sixty-one per cent. of an increase over the annual average of their requirements of these food commodities before the war. Where are the Allies to obtain it? Canada has been supplying an important proportion of the foods required by the Allies. Recently Canda's share in furnishing food stuffs to the Allies has been as follows: Of wheat, 42 per cent.; oats, 38 per cent.; barley, 14 per cent.; rye 4 per cent.; cheese, 67 per cent.; pork products, 9 per cent.; beef, 2¼ per cent.; butter 1½ per cent.

Lord Rhondda, British food controller, sent the following message recently: "The Allied larder is dangerously empty, but we are carrying on in the resolute belief that we can rely on the people of North America to prevent our food supplies becoming so diminished as to imperil the issue for which we are all fighting." The secretary of the British ministry of food says: "Great Britain relies on the United States and Canada for sixty-five per cent. of her essential food stuffs. Unless we get this food, or nearly all of it, we shall peter out."

There is not enough food on our side to let us be free from anxiety and danger of famine this year or next year, even if peace should be won before the winter comes; and if we all produce and eat as much and waste as much as we used to eat and waste, the privation among our Allies will become still greater—privation which is almost certain to mean starvation for women an dchildren and the weakening of our position in the war. That is the gravity of the food situation.

Why did we not know about that sooner? Well, the men at the heart of things have known of it, but the people would not hear or heed because the abundance all about us was so great. I sometimes think, with my body in Ottawa and my mind behind the lines at the front—If they hear not Moses and the Prophets (men of intelligence, vision and responsibility) neither would they be persuaded although one of our soldiers rose from the dead and said, "You folks at home are putting in peril all that I died to save."

Caues of the Food Shortage

The big harvest hid the danger from our eyes. It was such a big rarvest, not only in Canada but in other countries that there was plenty of food. But by the end of 1916 the real food situation began to be understood.

The causes of the world wide shortage are still cumulative. There was a general shortage in the northern hemisphere in 1916 of the five big cereal crops, wheat, corn, rye, barley and oats. Of these crops, 1,968,000,000 bushels less were produced in 1916 than in 1915, or about two and a half times the total quantity of these crops raised annually in Canada. Even in normal peace times this sortage would have been serious, but its seriousness is greatly accentuated by the war. The sortage was due to several causes. One of these was the weather, over which, of course, there was no human control. The chief cause, however, was the withdrawal of labor from farm production. Altogether a conservative estimate would place the total number of men withdrawn from agriculture for fighting and munition making in the allied countries at some 6,000,00. That has resulted in the prevalence of weeds, which it will take many years of vigorous labor to combat and remove. Moreover, the supply of fertilizers has been greatly reduced; and years will pass before the former productiveness can be restored.

The scarcity of food has been aggravated by losses due to the destruction by submarines. For a long time fifty per cent. of the cargo capacity of most ships crossing the Atlantic was reserved for food stuffs. Many of these ships have been sunk, as have also doubtless many others which were loaded solely with food products. Of the food suplies which were still available after these great losses, it cannot be said that they had been husbanded to the best advantage. The temporary prosperity of munition workers, many of whom are receiving higher wages than ever before, has resulted in extravagant buying and living. Taking all these factors into consideration it is no exaggeration to say that the world at present faces a food situation that is nothing short of appaling. Even if peace should be won this year severe privation from shortage of food and the danger of famine in some of the countries of our Allies are sure to continue until after the harvests of 1919 and 1920 are reaped.

The Responsibility Lies on Us

Since the war began the farmers of the Maritime Provinces have risen to the great occasion nobly. Some of the best of them have sealed their devotion by the supreme sacrifice of service unto death in Belgium and France. Those at home have spared sons and

MILL FEEDS FOR 1918

The Maritime Farmer Endeavours to Get Supply--N. B. Dept. of Agriculture Also Takes Action--To be Handled Through Agricultural Societies

The mill feed situation during the last fall and the winter just closed has been entirely unsatisfactory from a Maritime Province standpoint. The supply has been meagre and one of the difficulties has been to procure feeds without taking a large quantity of flour to each car. However, the Food Controller has issued an order to the effect that it will be illegal for any mill to insist upon wheat flour being taken where sales of feed are being made. This important concession has been won by the ceaseless activity of THE MARITIME FARMER. With this order in force it should be much easier to secure straight feeds for next year' delivery but it must not be forgotten that it is one thing to order feeds and another thing to have the transportation companies deliver them. The outlook in this connection, for the late fall of 1918 and the winter of 1919 is far from promising. Agricultural Societies therefore wishing to procure mill feeds should see that orders are placed with THE MARITIME FARMER not later than June 15.

During the past year THE MARITIME FARMER has handled quite a few cars of bran, middlings and cotton seed meal. The bran was supplied at from $36.00 to $37.50 per ton delivered; middlings at $42.50 to $43.75 per ton delivered; and cotton seed meal, 38½% protein from $49.50 to $51.40 per ton delivered. BY COMPARING THESE PRICES WITH THOSE YOU HAVE BEEN PAYING DURING THE PAST YEAR YOU CAN READILY DETERMINE FOR YOURSELF WHETHER OR NOT IT IS IN YOUR INTEREST TO HAVE THE AGRICULTURAL SOCIETIES IN YOUR DISTRICT TAKE UP THE QUESTION OF BUYING FEEDS CO-OPERATIVELY.

In order to insure a larger supply of mill feeds for the season of 1918-1918 THE MARITIME FARMER has sent a representative to Quebec and Ontario to purchase feeds for delivery from August and September on. The prices arranged for these feeds will be wholesale prices and every effort will be made to get straight cars of middlings and bran. However, it is only fair that members of Agricultural Societies procuring straight cars of feed, should buy their flour from the mills which agree to give them preferential treatment. There are mills in Canada who absolutely refuse to sell to farmers. These millers insist that their goods must pass through the hands of the dealers in order that the farmers may be made to pay from $8.00 to $10.0z per ton more for feeds than they have been paying where the supply has been procured co-operatively. We remember that fair play is bonny play and from millers willing to deal with farmers direct, farmers should buy their flour. Apart from the question of fair play there is the additional inducement of getting flour from $1.00 to $1.50 less than when it is brought through the ordinary channels.

Agricultural Societies interested in this movement should hold meetings at once and arrange to have their members order next year's supply so that the total order may be sent to THE MARITIME FARMER not later than June 15th. If you want any further information for your Society write THE MARITIME FARMER, Susex.

In addition to the Maritime Farmer's effort the department of agriculture, Fredericton, at the suggestion of the provincial convention which met Dr. James Robertson in Fredericton last week, has decided to send a representative to interview the millers and purchase all the available feeds for prompt delivery at New Brunswick points. The fertilizer question will also be looked into by the department of agriculture and all available fertilizer will be secured and delivered to N. B. points at the earliest possible moment.

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brothers for the army until the farms are stripped almost bare of necessary labor. I honor the men and women who have toiled bravely, early and late, to the last ounce of their strength It has been for a great cause. Now, as ever, he that endureth to the end shall be saved. So we must not now slacke nour efforts. The logical sequence to the work that has been done is to follow it by a further effort for still greater production. We should use all the experience we have thus far gained in planning and carrying forward a campaign for larger acreages and higher yields in 1918 and the years that are to follow. We can better meet the needs of the Allies by the production of food than by any other service. The framers of North America are in a better position than those of any other grain producing section of the globe to contribute to the food needs of the armies in Europe. A given tonnage of shipping can carry over twice as much grain from America as from Argentine and three times as much as from Australia or New Zealand. It is vital at this juncture and will continue vital until the end of the war that shipping be employed on the routes where it can be used to greatest advantage. One of the most effective ways to conserve shipping is to provide as large a proportion as possible of the food requirements of the Allies from Canada. Bear this in mind: When a ship is sent to Australia for foods for the Allies it means one less ship on the Atlantic route. In the time consumed to make one trip from Australia, the ship could make three trips across the Atlantic—equtl to one cargo of foods and two cargoes of men and equipment of the new Ameican army.

Single Plants and Single Bites

The personal effort of individuals is the only way whereby the suply of food can be increased. Under modern conditions one cannot expect the earth to receive a miraculous shower of manna; a Niagara of wheat to fill the empty granaries and elevators is not to be expected; food comes from sin gle plants produced by nature in co-operation with the intelligent labor of individuals. It is necessary to be diligent and fervent in conserving what has been produced, in preventing all waste and in shifting our own consumption from flour, beef and bacon which the armies and civilian populations need from us, to other foods which cannot be sent overseas.

A careful computation of the reduction in the consumption of beef, bacon and flour by means of the compulsory regulations of public eating places and voluntary co-operation of the women shows that the amounts saved are sufficient to provide those foods for an army of 500,000 men. The operation of both methods is being continuously improved.

War Production Campaign for 1918

Now the federal and provincial departments of agriculture are leading and directing the farmers towards an immensely increased production in 1918. A war production campaign is in progerss which will reach every farmer from the Atlantic to the Pacific. In the towns vecant lots will become war gardens. Canada recognizes her responsibility in partnership with the United States to answer the prayer of their needy Allies: Give us our daily bread.

The farmers of eastern Canada are called upon, by the grave emergency which our Allies face, to produce in 1918 2,000,000 of acres additional of cereals and cultivated crops. That amounts to about five acres per farm In the plans for increased production which have been agreed upon between the dominion department of agriculture and the Ontario department of agriculture, 1,000,000 additional acres has been accepted as the objective for Ontario. The deartment of agriculture for the province of Quebec believes the farmers of that province will go a good long way beyond their objective of 600,000 additional to the acreage of last year. The farmers of the three maritime provinces are depended upon to provide 400,000 additional acres of cereals and other cultivated crops. New Brunswick has set 150,000 additional acres as her objective for this year.

Outilne of Plans in New Brunswick

In the plans which have now been ageed upon between the dominion minister of agriculture and the Canada Food Board, on the one hand, and the province of New Brunswick, provision is made for the work of one or more greater production committees of farmers in every municipality. It is proposed that every farmer will be visited personally by a member of one of the greater production committees. The objec is to help him to understand the gravity of the situation and to enlist his earnest determination to do his best notwithstanding the greater difficulties he has to overcome and also because of the greater difficulties

(Continued on page 400)

Every Investor Should Send for This Book

EVERY Victory Bond Owner—every Investor, large or small, anyone who is interested in the investment of money in securities, should send for this book. It is being distributed free of charge by the Montreal Stock Exchange for the purpose of assisting and protecting the public in the investment of their savings.

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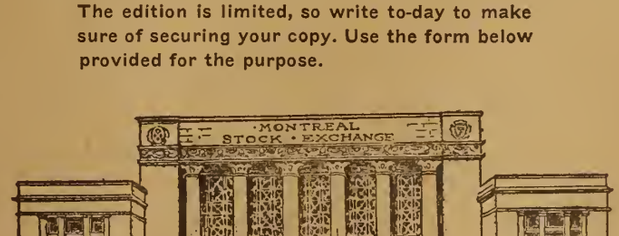

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And Co-operative Dairyman

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Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

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APRIL 9, 1918.

DATES OF ISSUE.

April 9-23
May 7-28
June 11-25

THE MARITIME FARMER HAD THE CALL

At the recent meeting of the Farmers and Dairymen's Association it was suggested that the agricultural societies of New Brunswick should have an official organ. The idea thrown out was that it would not only be well for every member of the agricultural societies to read a farm paper, but that that paper should be one in which all matters pertaining to agriculture might be published with a reasonable hope that members of agricultural societies would note them. No paper was suggested as meeting these requirements. However, when members of the Farmers and Dairyman's Association were called upon to name a paper the unanimous selection fell to the MARITIME FARMER. During the past year the Maritime Farmer, acting as the purchasing agent for a few agricultural societies managed to save thousands of dollars for them by delivering mill feeds, flour and cotton seed meal at cost. The Maritime Farmer has other things in view that will materially assist members of agricultural societies. We would like to have active secretaries of agricultural societies throughout the province send us from time to time, condensed reports of their activities in the sections they particularly serve. By doing this, one society will be able to suggest something of value to many sister organizations. In that way a great work can be accomplished in this province in stimulating an interest in agriculture and improved farm conditions. The Maritime Farmer is cheerfully placed at the disposal of any agricultural society secretary who cares to tell his confreres just what his society has accomplished for its members. Sometime when you are not busy, Mr. Secretary, drop us a line and we will be glad to publish it for you.

FERTILIZERS SCARCE—A LESSON

A year ago Agricultural Societies in New Brunswick were warned that it would be well to place orders for fertilizers previous to September, 1917, if they were desirous of having their orders filled for use in the spring of 1918. The wisdom of that warning is now patent. Chemical fertilizers are particularly scarce. Not only have some of the American wholesalers practically withdrawn from the New Brunswick field, but the United States Government has refused to permit the exportation of chemicals, and added to this is the very serious shortage in cars and the difficulties the railways are encountering in operating their systems due to the unusual severity of the past winter. No doubt 1918 seemed most remote in April, 1917. Wise farmers have long since had their chemicals in store. The foolish virgins are without fertilizers and at this time without any well founded hope of securing a supply. The lesson to be learned from this experience is that all Agricultural Societies in the province should at once make preparation for a supply of fertilizer in 1918. Meetings should be held at once and arrangements made to order fertilizer for delivery in the fall before the railways are again tied up. The situation promises to be even worse next year.

In the first place, it will be necessary to arrange with the United States government to allow the supply to cross the border. In the next place, the labor problem in the United States next year will be acute and there will be difficulties in handling the freights. The United States railways will be taxed to the utmost to look after their own war business. Taking all these things into consideration, an early effort should be made to get together and look after next years requirements.

The N. B. Agricultural Societies United is prepared to supply agricultural societies belonging to the organization with fertilizers at cost. All interested should write the secretary of the association, Mr. J. D. McKenna, Sussex, N. B.

THE BEST CONVENTION YET.

The annual meeting of the N. B. Farmers and Dairymen's Association for 1918, was in many ways the best convention that body has ever held. There was a disposition to get away from the cut and dried programe of previous years and the farmers themselves were more disposed to "talk things over." There was also manifested a desire to greater united effort on the part of the farmers of New Brunswick. The last few years have done much to demonstrate to farmers the desirability for united action. Present conditions, and the probable outlook after the war would suggest that "desirability" has become "need." There is no doubt that when conditions begin to adjust themselves at the conclusion of peace, the farmers of this country will find it one of the essentials in connection with their profession that they become as one in deciding matters of common interest to agriculturists. The organization of the farmer's forces in the West has been widespread and complete. In the Maritime Provinces we have not made such marked progress, but the idea of union is gaining strength and the next few years should see a wonderful change in the viewpoint of farmers towards their new interests.

EXTENDED ITS USEFULNESS

The Agricultural Societies United at a recent meeting of the directors, decided to ask the Provincial Government to extend the scope of its usefulness so that it might handle in a wholesale way, for the Agricultural Societies of the Province, many articles which are consumed by the farmers. So far the organization has only sold fertilizers, but if the necessary authority is given other important lines will be added to the list of commodities dealt in by the N. B. Agricultural Societies United. The organization has also requested the Department of Agriculture to appoint a field man who will instruct the farmers of New Brunswick in the use of unmixed chemicals. It is proposed to thoroughly organize the province of New Brunswick and to bring into being, an organization which will exercise very considerable influence among the farmers of this province. The step is decidedly one in advance of anything heretofore attempted, and the experience already gained shows that which may be accomplished in supplying farmers with materials at cost and thus effect a saving, amounting to thousands of dollars per year. Every agricultural society in the province should be a member of the N. B. Agricultural Societies United. The annual fee of which is fixed at $5.00 per annum by Order-in-Council, entitles any agricultural society to all the advantages of the organization. With an extended charter, the Agricultural Societies United will be able to give the farmers of the province a better and more valuable service.

A TIP FOR THE DAIRYMAN WITH MODERATE MEANS

The dairyman of modest means who desires to "grow into" the pure-bred business can do nothing better than give earnest consideration to the old cow. Check up the number of dairymen among your acquaintances who have been successful with registered cattle. You will find that a surprising number of them either began with or own a large part of their success to one old cow—a good one in each case, of course.

Unless a man has considerable money to spend he has to begin with a very few animals. Very often there is only the purebred herd sire and one female. When his hopes are pinned to but one animal, the dairyman very naturally takes many pains to get a good one. It is of much importance that he should do so, for he is selecting foundation stock which in time will influence a large part of his herd and perhaps determine his success or failure in handling purebred stock.

There are a number of reasons why an old cow is a safer purchase for foundation purposes than a young one. In the first place there are fewer chances for her to be a gold brick. She has age, so when the buyed obtains her he may not only know her records of production and the performance of her descendants, but also how well she has stood up under the strain of heavy production. From the appearance of a young animal the strength of constitution it will exhibit in later years can hardly be foretold with any greater degree of accuracy than its future productive ability, while in the case of the old cow there need be no guesswork about this matter.

In the important matter of price the old cow again has the advantage of the argument. As a producer of milk and butterfat she may have seen better days, so her owner is willing to let her go for less than a young animal with her main producing years still ahead of her. While the beginner in the purebred business wants a foundation cow of reasonable productiveness, his primary interest lies in her ability to transmit to her offspring the productive ability that she has formerly exhibited. So far as breeding qualities are concerned, the old cow is fully the equal of her younger sister. The younger cow may present her owner with more offspring during her years, it is true, but here enters a larger element of uncertainty regarding their quality. Everything considered, it is found that the dairyman with only a small amount of money to spend can obtain greater value in purchasing the old cow for foundation stock, with less risk in the investment, than in buying the younger but unproven animal.

THE NEW BRUNSWICK FARMERS AND DAIRYMEN IN ANNAL SESSION

(Continued from page 375)

Whereas the Dominion Government is urging upon the farmers the necessity of greality increasing the production of pork for the purpose of feeding our men at the font and our allies, and have declared that it is one of the great factors in winning the war,

And whereas owing to the high price of feed and labor the cost of production has become correspondingly high.

And whereas in former years when increased production was achieved, prices have always fallen, farmers are deterred from increasing their output unless they are assured of a stable market at prices which will allow them a reasonable profit.

Therefore resolved that the Farmers and Dairymen's Association request the Government to guarantee that the price received by the farmer for pork for the next two years shall not be less than 20 cents per pound, thus inducing increased production and giving farmers guarantees similar to those manufacturing munitions.

Further resolved that this resolution be sent to the Hon. Mr. Crerar and Hon. Mr. Tweeddale.

* * *

Whereas, a big majority of the children attending the public schools of this province are sons and daughters of farmers,

And whereas, the instruction being given in said schools is very largely of an abstract character and tends to make said children favor professional occupations, which further tends to increase the population of the towns and cities,

And whereas, if the curriculum of said public schools of this province were to contain some more concrete form of education regarding agricultural matters it would tend to increase the desires of said children toward agricultural pursuits and also to increase the population of the farms.

Therefore resolved that the Farmers and Dairymen's Association of New Brunswick is of the opinion that a largs measure of instruction in said public schools about local conditions and activities in the country relative to agricultural pursuits is desirable, and that the efforts of the pupils, particularly in rural diistricts should be directed in a greater degree by the teacher through practical methods of training so as as to cause the children to acquire a clearer, stronger and more intelligent interest in the greatest of all industriees in the province.

Further resolevd that a copy of this resolution be presented to the Board of Education.

Moved by H. H. Magee.
Seconded by James Porter.

* * *

Whereas, the present law in regard to bulls running at large is left to the will of the County Councillors and is not being enforced,

Therefore resolved that in the best interests of the farmers of the province, the Provincial Government be asked to pass at this session of the Legislature, a law prohibiting the running at large of bulls in the public highways, in any part of the Province of New Brunswick.

Further resolved, that provision be made for the strict enforcement of this law, by fines and penalties as the Government may direct.

Submitted by Agricultural Society No. 122, Newcastle. H. Williston, President, G. G. Stothart, Secretary.
Seconded by John McColum.

* * *

Resolved, that in deference to the large number of French speaking farmers in the Province of New Brunswick and to the large representation of the said class attending this convention, we respectfully ask that at least one session of the future conventions of the Farmer's and Dairymen's Association be addressed by French speakers.

W. O. G. DOUCETT,
G. J. DOUCETT,
T. J. DOUCETT,
J. E. DeGRACE,
J. A. BURNIER.

* * *

Whereas every available pound of flour is needed to sustain the fighting forces at the front,

And whereas the millers of the Dominion are forcing flour on the people by refusing to sell feed without a quantity of flour in each car, regardless of the fact whether it is needed or not,

And whereas this Association of the Farmers and Dairymen of the Province of New Brunswick believe such actions to be pro-German.

Therefore resolved that it be demanded of the Food Controller that legislation be passsed to force the millers to abandon such destructive procedures.

Moved by R. E. Floyd.
Seconded by Frank C. Fawcett.

* * *

The Finance Committee reported a balance of upwards of $125.00 after they had examined the Treasurer's books and vouchers.

On Thursday afternoon the delegates were taken by special train to the Experimental Farm where they inspected the various departments and listened to an address on live stock by Prof. J. M. Mitchell. Mr. Hubbard the Superintendent of the Farm, always gives the farmers a hearty welcome and plans to give them a profitable outing whenever they visit the farm.

J. H. Grisdale, Director of Dominion Experimental Farms and W. W. Hubbard addressed the audiences on Thursday evening on labor saving plans and farm machinery. Prof. Grisdale's suggestions included: Make better use of brain power to combine knowledge and energy for best results. Plan the fields. Have seed ready early. Have implements and harness in good repair. Have the horses and a sufficient number of them in good fit for spring work. Use three and four horse teams if possible. Treat seed for smut. Look well to the drainage of fields. Start work at the first opportunity. Use big efficient machinery. Plan for large fields instead of small patches. Increase effectiveness of man power and horse power by proper planning.

Officers for Ensuing Year

The election of officers on Friday morning resulted as follows:—

President—L. M. Anderson, Sackville.

Vice-President—J. A. Bernier, Edmundston.

Recording Secretary—C. M. Shaw, Hartland.

Corresponding Secretary — A. R. Wetmore, Clifton.

Treasurer—H. H. Smith, Hoyt Station.

County Vice-Presidents

Albert — Albert Mitton, Hopewell Hill.

Carleton—Scott A. Shaw, Hartland.

Charlotte—Stanley Wilson, Rolling Dam.

Gloucester—W. S. D. Doucett, Beresfor.

Kent—Simon Barstarachi, Buctouche

Kings—H. H. Sherwood, Upham.

Madawaska—Elias Doyle, St. Hilain.

Northumberland—W. M. Johnson, Chatham Head.

Quenes—Fred N. Fowler, Chipman.

Restigouche—J. E. Cooke, River Charlo.

St. John—J. M. Donovan, St. John.

Sunbury—M. A. Smith, Hoyt Station

Victoria—Hans P. Hanson, Peterson.

Westmorland—S. Melanson, Memramcook.

York—John Inch, Burtts' Corner.

A discussion on Agricultural Societies was led by M. A. MacLeod, Supt. of Agricultural Societies of the Province, who also read the following extract from a letter just received by Mr. McKenna of the Maritime Farmer, from the Food Controller:—

"As soon as I receive the full data in answer to the charge will lay same before you.

"We have notified the mills that unless this practice of endeavoring to force out the sale of flour with cattle feed is stopped that we will cancel the license of the miller and prevent him operating unless he desists from such practice.

"In addition to individual cases have written the secretary of the Millers Committee, pointing out that they had better use their influence to stop this practice and so save cancellation of licenses. The committee in session today have pledged themselves to do their best to stop same in the future.

"The above is mentioned to you so that you may realize that your effort on behalf of the farmers has brought forth fruit.

"Unfortunately there seems to have been a misunderstanding arisen out of our correspondence. The writer is very anxious that such shall not exist, and if there is anything that I can do to remove same or to further the good work in which I understand you are very active, it will be a great pleasure for me to do so, and I will be glad to hear from you respecting same."

Yours very truly,
CANADA FOOD BOARD,
per Frank H. Keefer,
Counsel and General Adviser.

After the reading of the letter in question the Association passed the following resolution which was ordered to be forwarded to the Food Controller with the resolution already referred to so that he may see the attitude of the farmers of New Brunswick before and after they were guaranteed a fair show re feed supplies.

* * *

Whereas a letter has been received and read publicly, stating that a definite action has been taken by the Food Controller favorable to the feed question respective of the farmers' request

Therefore resolved that we commend the action of the Food Controller in this matter and that a copy of this resolution be forwarded to said Food Controller together with a copy of the resolution passed at a previous session in which his non action was roundly condemned, so that he may know the attitude of the farmers of New Brunswick on the feed question.

On Friday afternoon the delegates visited the Provincial and York County Seed Fairs in the gymnasium of the Normal School, after which the largest convention in history of the Association disbanded for another year.

PRESIDENT BAIRD'S ADDRESS BEFORE THE N. B. F. & D. A.

Fellow Members and Officers of the Farmers' and Dairymen's Association:

On this the 42nd Annual Meeting of our Association, it is my privilege and plesant duty to extend to you a word of welcome. I hope you may find the meetings helpful and inspiring and that you will carry home with you pleasant memories of these days spent in the city of Fredericton. I hope that you may not only enjoy the meetings but that you may profit by them and get a vision of the possibilities of agriculture in New Brunswick.

We are met in convention to deal with matters of vital importance—not only to ourselves but to every man, woman and child within the bounds of our Province. This is a statement that would have been questioned, perhaps laughed at had it been made a few years ago, but I think you are all ready to accept it now. Every eye is directed to the tiller of the soil as the main hope for the present and the years to come. Big things are expected of us. Shall we "measure up?" This is the time of our testing, it is also the time of our opportunity. The hopes of the fathers of this Association, thirty or forty years ago, as to the development of Agriculture in this province have not yet been realized. They did their part. They laid foundations. They cleared land and built roads. They had faith in God and in the farm. They planned for their sons to settle on the land. But another generation arose. The very economy and thrift of the "old folks" often placed the son where he viewed farm life as too slow and tame for him. Black foxes or building lots out west —in some cases small—used up the money received for the Old Homstead. Perhaps this was the exception rather than the rule but we must face the fact that the general trend has been away from the country and the farm to the town.

I believe this applies more strictly to the English speaking people than the French, yet on the whole, in the Province of New Brunswick the last census shows that during the ten preceding years the rural population decreased by 22,262. Perhaps this has something to do with the claim put forward in the Canada year book just published, "That there is more big game to the square mile in New Brunswick at the present time than in any other part of North America."

Why do we speak of these things at the opening of this convention? They are not pleasant—they are not encouraging—but they are true, and they indicate that there has been something wrong in the attitude of the people of New Brunswick in regard to the farming industry, during the present generation.

If a wrong, it is to be righted; it must be faced. We must be convinced that the wrong exists. It seems to have taken several years of war and a Military Service Act to arouse some to the fact tha tthey ought to be farming. Many of us who meet here from year to year have deplored very much the tendency of the young man to avoid settling on a farm in N. B. Personally I may say that 20 years ago I would hardly have said N. B., but my own experience and observation during these years have convinced me that there is no better Province in the Dominion than our own Province of New Brunswick. This is especially true for the young man with small means wanting to start a new home. I have studied closely for a number of years a publication issued by the Department at Ottawa, giving monthly a statement on crops, yields per acre and farm conditions generally in all of the different provinces and I find that N. B. does not suffer by comparison. Our Province is just coming to its own in the way of popular recognition of its resources and advantages. We used to think if we wanted to grow apples we must go to Nova Scotia. I think we are convinced now that if we wean apples all we have to do is to plant apple trees—and take care of them. What has been accomplished during the last few years in apple growing ought to be an inspiration to us in regard to other unused natural advantages right at our doors. Those who have surveyed the Province and studied conditions in reference to the sheep industry, report opportunities for development along that line almost unequalled anywhere.

We have spent considerable time at our meetings for the last few years, dealing with the dog. He isn't dead yet, but he's regulated and we now have time at these meetings to talk sheep and more sheep.

We spoke of this being a testing tiime for us. Is that true? Reference has been made in our meetings of recent ears to the war cloud that was hanging over us and hopes have been expressed, and praeyrs offered that before we should meet again that cloud would have vanished—but instead, I think we may say, the storm is on. A cry comes to us from over the sea for help. It comes through the church and thes ecular press, from relief committees in those stricken lands, from the British Government and our own Government. Money is needed—food is needed. We can no longer sit

(Continued on page 398)

HORTICULTURE

NEW POISON SPRAYS AND NEW VARIETIES OF FRUIT FOR THE FARM ORCHARD

The Ontario Fruit Growers. Assoia tion at its annual convention recently in Toronto, discussed the problems that affect the present state of the fruit industry. and the propects of the coming seasou. The apple crop, according to the report of the President, Mr. F. A. Sheppard, was almost a failure in 1917, and finer fruits from peaches to berries, were in no case over half a crop. and in some districts not over 15 per cent. crop.

One of the great handicaps that fruit growers are to experience this season is the high price of poison sprays.

Prof. Caesar said that arsenate of lead. in 100-pound drums, is likely to cost 20c. to 25c. per pound in paste form, or 40c. to 48c. in powder. This is about three times the price ruling before the war.

A New Spray

Arsenate of lime, or. as it is sometimes called. calcium arsenate, is only 15c to 18c in paste form, and 30c to 35c in powder. The arenate of ilme, Prof. Caesar said. has given good control with biting insects, and is more convenient to use with lime or sulphur than arsenate of lead; but, used with water alone, it will severely burn foil age, while arsenate of lead will not. Prof. Caesar destroyed almost every leaf on a pear tree in this way.

As the condling moth will probably not be very bad this year. Prof. Caesar thougth it might do, in using arsenate of lead, to use 1½ lbs. paste or ¾ lb. powder to 40 gallons in spraying apples and pears for moths. If only one spray is given this year the most important is the one just after blossoms fall; the next in importance is just before bloom.

Regarding dust spray, Prof. Caesar said he had secured good results from this. and good results had also been reported from Nova Scotia, New York and Michigan. In an ordinary year in well pruned orchards this will give good results generally if well applied but under conditions favorable to scab it is not equal to liquid spray.

New Varieties of Fruit

Prof. W. T. Macoun. Experimetal Farm, Ottawa, in giving a resume of his work. in growing and testing new varieties of fruit said, Red June a new early apple tested by him is a good shipper, and Stayman Wine Sap. a "sport" of the original Winesap, is a larger and better than the original apple of that name. Melba and Joyce seedlings of the McIntosh come in August and September respectively and are both good apples. Omaha and Emerald. new plums, created by hybridizing Burbank and Wolfe, are both excellent. The first named, a red plum. comes in August and the latter a red and yellow. in September. Portia and Oleria are two promising new varieties in strawberries.

Potato Crop and Small Orchards

A number of the smaller orchards are being neglected, and this, Mr. D. Johnson. Dominion Fruit Commissioner. said was one reason why he predicted that the coming apple crop would not be a large one. At the same time, he said, he believed well cared-for orchards will give profitable returns this season. because of special efforts being made to educate consumers to the use of fruit and vegetables rather than other lines of food.

Dealing with potaotoes. Mr. Johnson and there was an estimated surplus of 2,000,000 bushels in Prince Edward Island alone. but. owing to the breakdown in transportation, much of this surplus will probably be fed to stock. The surplus in iNew Brunswick. he added. has been largely absorbed in meeting the demand from New York and Boston.

Failure Crop and Low Prices

Past President Dr. A. J. Grant of Thedford said he believed the failure of last year's apple crop was largely owing to trees having been robbed of vigor by scab infection of the leaves in 1916 As a result of neglect in 1916, and previous years, he believed many small orchards would disappear.

An other grower. referring to fruit gfrowing in the Maritime Provinces. said that after three years poor crops of apples the prospect is for a fairly largs crop this year, with low prices. He expressed regret because of the high prices asked for Nova Scotia apples last fall had resulted in considerable quantities of these being still on hand.

Girls on Fruit Farms

Dr. Riddel, Superintendent of the Trades and Labor Board. outlined the good work done by girls on the fruit farms of Ontario last year. They had taken up the work largely on patriotic grounds. but they could not be expected to subsist on this, and he was sure there would be some settlement of the wages problem. He stated that 54 per cent. of the girls earned four to seven dolars per week last year, and had to provide for their own board. He thought the farmers might help in the matter of camps so as to reduce expenses in this direction.

In the course of the discussion which followed Dr. Riddle's address, some of the farmers present declared that it would be impossible to increase the wages of girls this year as it would dislocate the whole of the farm market as everybody would be demanding increases.

Farmers from London. Clarkson. Newcastle an dother disrticts spoke very favorably of the work done by the girls, and stated that the had secured good profits from their help in gathering in the fruit crop.

Pickers and Packers Scarce

With regard to the peach crop outlook. Mr. Hamilton, Grimsby. said that the showing of buds was good, but the organization of the industry was poor and the transportation outlook was bad. He recommended the more extensive use of motor trucks and that the Provincial Government should take over the trunk roads. He looked to the women of Canada to help in the problem of picking and packing. There was not enough care. he states, in the packing of the fruit. He deprecated any suggestion of reciprocity with the United States, and claimed that such a step would ruin the peach industry of Ontario. The prospects in other fruits were said to be reasonably good.

Warm appreciation was expressed for the help that has been given from the school pupils, but it was pointed out that the month of September was more important to the farmer in this regard than the month of August, and a resolution was carried asking the Board of Education to allow the pupils to remain out of school until October.

Appreciation was expressed. also, for the help received by the farmers from the Department of Agriculture.

A FRUIT ACRE ON EVERY FARM MOST VALUABLE

Whatever comparison may be made in connection with the relative positions of the farmer and his city cousin along most lines of living. privileges. and oportunities, there is one thing, at least. in which the farmer has a decided advantage; and that is the possibilities of supplying the home with the luxury of a bountiful store of neecssary. wholesome and luscious home grown fruit; necessary. because it is almost, if not quite impossible, to maintain perfect health, particularly in the case of children, without the natural. corrective. and laxative qualities of nature's best medicine and antidote to many indiscretions of modern living; wholesome because in addition to its other good qualities, fruit furnishes an important and one of the most easily digested articles that can be supplied to the daily ration; luscious, because of its juicy substance and palatability. There re very few peopel of any age who do not now and again enjoy a good apple. peach or pear. and the child who refuses good fruit must either have been deprived of it in his earlier days or be too ill to enjoy anything at all.

Any man who owns a farm and has lived on it for three or four years and

RENNIE'S War Time Production Seeds

THERE must be no "slackers" this year, either among the seeds or the growers. Every man and woman with garden space, must produce to the limit of his or her ability. And that is why Rennie's seeds are so essential—live, vigorous seeds from tested stock, to ensure record crops.

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Spramotor
It isn't a SPRAMOTOR unless we made it

Made in Canada—No duty to pay.

THE LONDON SPRAMOTOR
5039 King St. East, - - - - LONDON, CANADA

is still without an abundance of most kinds of fruit that will grow and mature in his locality, has neglected to take advantage of one of his greatest opportunities and advantages.

The one particularly good thing about providing for a bounteous supply if fruit is the fact that, on the farm, the expense outside of a little labor, which can be given now and then, so not to seriously interfere with the regular farm work, is comparatively trifling. An acre of land properly laid out, planted and cared for will supply an ordinary family with all the fruit they can use from the time the first big luscious strawberries come until the frost compels the last big red Northern Spy or McIntosh to seek shelter in the cool clean cellar, where, almost until the strawberries come again, they may be enjoyed by young and old, fresh from the box or barrel; or, if the need arises, from the fruit jar or the evaporator box.

Lay Plans Now

Now is the time to plan for the fruit graden. Select a plot of good land and manure it well during the winter. If it has been fall-plowed, so much the better; if not, plow as early as possible in the spring and thoroughly work down into a fine mulch. If the ground has not been underdrained, it should be done at once, or at least as soon as possible in the spring, unless the soil drains out naturally. One cannot have a satisfatory orchard on wet land. The farmer frequently needs to get on to this land very early in the spring which cannot be done unless it is thoroughly drained. And then again much damage will be done to young trees, shrubs and plants by frost heaving them out of the ground if good drainage is neglected.

Plant all young fruit trees and plants as early in the spring as the ground is fit; but on no account work or tramp over the soil when it is wet. Fall planting is done in some cases, but it is usually not nearly so satisfactory as the spring, or unless conditions are very favorable many losses will be sustained.

In selecting trees and bushes for planting be sure and get them from a reliable nursery. This is very important both on account of the vitality of the tree as well as having it true to name. One should accept no substitutes. When a list has been made out carefully from varieties that promise to do exceptionally well in a certain locality a substitution that is claimed to be "just as good or better" should ont be permitted, as the results will most likely be disappointing. If an order is signed with an agent of any company, be sure that the words "No substitutiin allowed" appear on it, or otherwise you may find that there is a clause in the contract which grants the company that privilege. Be sure to read over the order in your own hands, before signing any contract. The nubmer and age of each variety shiuld be specified.

In apples, pears, cherries, peaches and plums two year old trees are usually the best. Agents often try to sell older trees at a higher price, but they are really not as good as the younger trees.

In planting, all broken or bruised limbs and roots should be cut off and the top trimmed back to form a well balanced head. Planting is a most imoprtant part of forming an orchard or fruit garden. The hole should be dug large enough and deep enough to allow all roots to be spread out in a natural position so that fine, fresh and moist soill may be used to cover them. The size may be 18 inche to 24 inches square and the depth be greater than needed for the tree, by several inches, which may then be filled up with loose earth according to the requirements of the plant, thus leaving a favorable condition of soil all round for the new root growth. Lumps of earth, grass, manure and rubbish of any kind should not come in contact with the roots as these will sooner or later cause an air pocket and tend to dry out the mass. After the tree has been put in uosition and the roots properly trimmed and spread, a shovelful of fine, moist but not wet earth should bc thrown on top and the tree raised up and down rapidly a few times to work the dirt around the roots. This should be repeated until the dirt is an inch or two above the roots, when it should be tramped down firm to within an inch or two of the surface and then filled up with loose dirt an inch or two above the level of the ground, over which a covering of coarse horse manure should be put to keep the moisture from evaporating. Cultivation of the soil should be continued all summer for several years in order to favor moisture. Some other cultivated crop may be grown in the same ground also for three or four years but should not come too closely in contact with the trees or bushes, all of which should be kept in straight rows so that cultivation may be accomplished as casily as possible.

In selecting varieties for one's own family use, the process is quite different from that of planting for commercial purposes. In the latter case it is considered best to have only two or three standard varieties, at the most; but for private use a large variety may well be chosen, particularly for the purpose of prolonging the season in any line where there is an opportunity to do so. This can easily be accomplished in most fruit that is grown on trees such as apples, peaches, plums, cherries, etc, and to some extent in other fruits, such as strawberries, raspberries, gooseberries, blackberries, etc., but owing to the sort season of the latter classes the difference between early and late varieties is not so marked.

Inasmuch as the climate of different careful to ascertain if they are hardy sections on Ontario varies greatly, no list can be given that will be applicable to all, consequently any person planting out new varieties should be in their particular locality.

Doubling Crops is Doubling Dollars

Doubling crops is more than doubling dollars, it is often trebling dollars and the soil is permanently improved every time you put fertilizer on it. Fertilizers are inexpensive compared with the results. Crops have advanced in price more than Fertilizers have. A Bushel of Corn will buy 50 per cent more Fertilizer now than before the war. You certainly will never increase crop production until you use fertilizer. There is serious shortage of farm products, so *order your Fertilizer now* for this year, when your effort to increase crops is so much needed. Explain your soil to us and state what crops you want to put in and we will advise you what kind of fertilizer and how much you need. Special rates to farmers who club together and order in car lots. Recommend a good reliable agent for us in your district, if you can.

"Best-by-Test" FERTILIZERS

FIRST AID TO THE SOIL — BEST BY TEST — FERTILIZERS

Reliable Agents Wanted

Write for our Free Book on Plant Food

CANADIAN FERTILIZER CO., Limited

14 Market Chambers, CHATHAM, ONT.

GROW YOUR OWN FOOD

Your garden will produce more and you'll be able to supply your table with quality vegetables of finest flavor if you plant

DUPUY & FERGUSON'S SEEDS

Every seed we sell is thoroughly tested and selected from the best stock. If you have a garden you need our new 1918 catalogu. It tells you about every kind of farm and garden seed, what to plant, when to plant it, and how to cultivate it. Write for it today. Sent free upon request.

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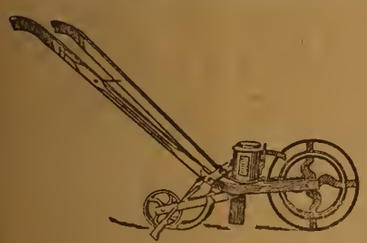
36 JACQUES CARTIER SQ., - - - - MONTREAL

GARDEN SEEDERS!



A DANDY FOR TURNIPS

Makes the drill, sows, covers and rolls the seed while you walk. Does the work of two men in half the time. No better seeder built for the accurate sowing of turnip, carrot, cabbage, beet, pea, corn and all other kinds of garden seeds.

Price $10.50 Delivered at Your Station. Order Today.

The Sussex Mfg. Co., Limited,

Sussex, N. B.

FRUIT PACKAGES

The fruit season is again drawing near, how about your boxes and crates for the coming season To pack and ship to the best markets, you require the best standard packages, which can be had by placing yopr orders early with the

Hantsport Fruit Basket Co'y.

HANTSPORT, N. S.

GRASSELLI
SPRAY PRODUCTS
ARE BEST

Lime Sulphur Solution
Arsenate of Lead (Paste and Powder)
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BUTTER PARCHMENT--Printed or Plain--at Farmer Office

DAIRYIN.G

INFECTIOUS OR CONTAGIOUS ABORTION IN DAIRY CATTLE

In some sections of the country this common and dread disease is responsible for infinitely greater dairy losses than the more discussed and probably better known plague, bovine tuberculosis.

I can think of but two features of this malady that might, in a negative sense, be classed as redeeming: (1) the bacillus or germ from which infection originates is easily destroyed in a 2 per cent. or 3 per cent. solution of any good antiseptic; while (2) animals having aborted two three years in succession seem to become immune and seldom fail (provided by the time they can be induced to conceive at all) to carry their calves full time. Eventually, therefore, the disease wears itself out, or if young stock are raised, is confined largely to them.

Abortion, or premature birth, or "slinking," to use the popular term, may be accounted for in either of two ways—regarded as an accident or an affliction. It may result because of a run down and consequently weakened condition caused by starvation, exposure, suffering, etc.—a slip, a fall or a bodily injury, in any of which instances it could rightly be classed as accidental. However, only a very small per centage of cases come under this heading, by far the greater number being the direct result of infection with the organism known as the bacillus abortus" or the germ of abortion. This is infectious or contagious abortion—an inflammatory condition of the mucou membranes of the uterus and the encosed foetus, occasioned by the presence of active bacilli abortus. It is undoubtedly an infliction, and a sore one.

The germ of abortion, now definitely known and easily recognized is a microscopic, hairlike or rodshaped organism, which is remarkably virulent or active, and for that reason unusually infectious, as under favorable conditions it will remain active for many months. It may be spread from one animal to another by means of the genital organs, (believed to be the most common manner of infection) and through the medium of uterine discharges from infected females. And again by means of the alimentary canal, by the introduction of the germ through the nose or mouth following its exposure in rectal or urinary excretions; and also by means of food or water or their containers, which have become contaminated.

The germ often finds lodgment in the udder and is implanted in calves through milk taken directly from the teats or through infected milk which has not been pasteurized. In such cases of impantation abortion is likely to occur during the fourth or fifth month following the heifer's service.

Various experiments with prepared cultures of the active germ tend to confirm these theories and illustrate the extremely infectious and dangerous nature of the disease. Pregnant cows known to be free from it have been innoculated with the living germ, injected subcutaneously directly into the circulatory system; and also by the introduction of the active organism into the digestive tract by way of the mouth with the result that they lost their calves, active abortion having been produced.

Theoretically the disease is not so very hard to combat and its complete elimination from the infected herd not particularly difficult of accomplishment. Patience and faithful perserverance are about all that is required. As is often the case, howeveh, in practice it somehow does not seem to work out that way, and its eradication by the average dairy farmer appears fraught with untold difficulties, ultimate success being achieved only after a protracted and uncertain struggle of dubious outcome, often ending in failure and discouragement.

Several reasons may be advanced in possible explanation including: (1) A very general lack of proper knowledge concerning the ramifications of the disease. (2) Disinclination, because of lack of help or ambition, to go to all the trouble incident to a war against the contagion, waged to a successful conclusion. (3) Incredulity, carlessness or irregularity in carrying out and faithfully following up the prescribed system of treatment. (4) A false sense of security engendered in the mind of the busy dairy farmer after a lapse of time in which no new cases develop, and a consequent discontinuation of either active or preventive treatment resulting in a fresh outbreak.

Contagious abortion may be handled by means of one, two or three methods, or better still, all three may be employed. The germ may be attacked: (1) directly through the circulatory system by means of hypodermic injections; (2) locally by giving at regular intervals douches with a proper antiseptic solution introduced into the vagina and uterus by means of a funnel and length of rubber tubing; and (3) by the liberal and constant nse of an approved disinfectant, sprayed upon all utensils, floors, stanchions, stalls, bedding, litter and the head and hind parts of the animals themselves. A cow that has alredy aborted should be put by herself and irrigated regularly twice daily until all signs of discharge have disappeared; and after that once every two or three days until she comes in heat. Do not breed her, but continue the antiseptic douches every three days for seven times, or until a period of twenty-one days has elapsed. The idea is that when in heat the neck of of a uterus dilates and the passage is open, so by flushing the parts at that time the antiseptic solution is introduced directly into that organ. The germ is able to pass the mucus stopper at the neck of the uterus—hence the necessity of frequent subsequent douches to prevent reinfection. If the animal appears normal and comes in heat at the expiration of the twenty-one-day period, it is well to breed her—abortion and sterility go hand in hand together. Care should be taken to carefully flush the sheath of the bull with the same solution used for the cows, before, and immediately after, service.

The pure carbolic acid treatment either by means of a two or three dram 3 per cent. solution hypodermically injected, or a teaspoonful mixed with water and stirred into the dry feed, goes very well with the above local treatment. It is best to secure the ervices of a qualified veterinarian and have him lay out an exact course of procedure, and advise as to the nature and strength of all injections and solutions. The Vermont experimental station has made exhaustive experiments with Methylene Blue in the treatment of abortion—the figures facts and conclusions are embodied in a bulletin which is free to anone who will write for it. The treatment seems to be quite generally successful, the drawbacks to its popullarity being the rather heavy expense, and the fact that after being dosed, everything with which the cow comes in contact, manager, water bucket, stanchions, gutters, etc., including herself, becomes colored a bright blue; while her milk will be found to have acquired a decidedly bluish tinge.

Cows that have not aborted should be kept by themselves and as far apart from the affected animals as possible. They should always be sprayed externally, front and rear, at least once a day, and washed out internally every two or three days. Heifers calving for the first time seem to abort at an earlier stage of pregnancy than do older cows, the latter generally losing their calves during the sixth, and more often the seventh month. So long as the discharge from the vagina remains clear an healthy and the clot attached to the lower point of the vulva continues in place, there is not much danger rof impending trouble. When, however, the little clot disappears, the discharge becomes more plentiful and of a dirty or bloody color, the vulva swells, and on the inside presents a blood-shot appearance, (the minute blood vessels having becoome congested) and finally when the milk flow slacks off (in the case of milch cows), and becomes useless, and the udder swells as when a cow is "making bag," then look out, for you may be certan that within a few days that cow will lose her calf.

After abortion has occurred, every care should be taken to disinfect thoroughly; the bedding and litter, also the foetus, should be burned at once, and later discharges looked after and treated similarly. Once contagious abortion has gained a foothold and become firmly established in a herd, it is of course a long and weary job to completely eradicate it. The resulting losses will be great, not only through the destruction of calves, but also because of impaired milk flow, and still further because animals having aborted often become barren and so create another source of loss. Every precaution should be taken to keep free from the disease a clean herd. It is far better to use good bulls and raise their heifer calves than to buy from outside herds—however, if strange animals must be purchased, they should be regarded as suspicious and kept entirely by themselves until they have proved to the contrary; for in dealing with this disease an ounee of prevention is certainly wroth several pounds of cure.

The unfortunate breeder who happens to sell an animal that later on reacts to a tuberculin test, even though the animal may harbor only a

MAGIC BAKING POWDER
Magic Baking Powder costs no more than the ordinary kinds. For economy, buy the one pound tins.
MADE IN CANADA
E.W.GILLETT COMPANY LIMITED
WINNIPEG TORONTO ONT. MONTREAL
MAGIC BAKING POWDER
CONTAINS NO ALUM
REFUSE SUBSTITUTES

What CP Means to the Farmer

C.P. means Paint of only one quality—the best. It contains only the purest Oils, the best Lead and Zinc, mixed in scientifically correct proportions, and ground to the finest degree.

The Farmer knows, by careful comparison of cost per gallon and length of time on the house, that C. P., CANADA PAINT, is unquestionably the most Economical and the Best Paint for anyone to use.

"HOMESTEAD LIQUID RED" is the paint for Barns and Silos. One gallon covers 300 square feet, two coats. Ask the C.P. agent in your town for any information required.

Write us for your copy of our new paint book, "What, When and How To Paint". Sent free upon request.

THE CANADA PAINT CO. LIMITED,

Makers of the famous "ELEPHANT BRAND" White Lead.

572 William Street, Montreal. 112 Sutherland Ave., Winnipeg.

2

For Better Butter use

Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED 222

LISTER

The name that stands for Quality in Farm Machinery

LISTER ENGINES ARE BRITISH BUILT

Have the Largest sale in the British Empire.

2,3,5,7 & 9 H.P. On Skids or Truck. High Tension Magneto Ignition. Automatic Lubrication.

Lister Silos, Ensilage Cutters, Threshers, Sprayers, Milkers, Electric Light Plants, Melotte Cream Separators.

THE LISTER GRINDER

Write for price of our famous Grinder Outfit comprising 5 H.P. Lister Engine and a 9¾ Lister Grinder.

Write to Dept. F

R.A. LISTER & CO., LIMITED

TORONTO, ONT.

EAGLE MOTOR STYLE

Write to-day for our big **FREE CATALOGUE** showing our full lines of Bicycles for Men and Women, Boys and Girls.

MOTOR CYCLES

MOTOR ATTACHMENTS

Tires, Coaster Brakes, Wheels, Inner Tubes, Lamps, Bells, Cyclometers, Saddles, Equipment and Parts of Bicycles. You can buy your supplies from us at wholesale prices.

T. W. BOYD & SON,

27 Notre Dame Street West, Montreal.

remote tubercular lesion which may never develop actively and cause that animal to become a "spreader" comes in for severe comendation. But what of the one who sells an aborter? The latter may work far more injury in the herd which it enters than would the former, but nothing much is ever thought of or aid of it. There are I believe tests for discovering the presence of the bacillus abortus, as well as for locating germs of tuberculosis—why not employ them? I trust before very long to see the day when immunizing serum treatments such as have done so much to check the spread of hog cholera and other contagious live stock curses, may be developed and perfected and rendered available, in a wholesale war upon abortion and similar dairy calamities.

GOOD FARM BUTTER

The butter made on the farms may be materially improved in quality in most cases if standard methods are employed and greater care is exercised in carrying out the following necessary details:

1 Produce clean milk and cream. Cool the cream immediately after it comes from the separator. Clean and sterilize all utensils.

2. Ripen or sour the cream at from 65 degrees to 75 degrees F. until mildly sour. Always use a thermometer, in order to know that the right temperature is reached.

3. Cool the cream to churning temperature or below, and hold at that temperature ofr at least two hours before churning.

4. Use a churning temperature—usually between 52 degrees and 66 degrees F.—that will require 30 or 40 minutes to obtain butter.

5. Clean and scald the churn, then half fill it with cold water, and revolve until churn is thoroughly cooled, after which empty the water.

6. Pour the cream into the churn, through a strainer.

7. Add butter color—from 20 to 35 drops to a gallon of cream—except late in the spring and early in the summer.

8. Put the cover on tight; revolve the churn several times; stop with bottom up, and remove stopper to permit escape of gas; repeat until no more gas forms.

9. Continue churning until butter granules are formed the size of grains of wheat.

10. Draw off the buttermilk through the hole in the bottom of the churn, using a strainer to catch particles of butter. When the buttermilk has drained out, replace the cork.

11. Prepare twice as much wash water as there is buttermilk, and at about the same temperature. Use the thermometer; do not guess at temperatures. Put one half the water into the churn with the butter.

12. Replace the cover and revolve the churn rapidly a few times, then draw off the water. Repeat the washing with the remainder of the water.

13. The butter should still be in granular form when the washing is completed.

14. Weigh the butter.

15. Place the butter on the worker, and add salt at the rate of three-quarters of an ounce to a pound of butter.

16. Work the butter until the salt is dissolved and evenly distributed. Do not overwork.

17. Pack in any convenient form for home use and make into one pound prints for market, wrapping the butter in white parchment paper and inclosing in a paraffin carton.

18. Clean the churn and all butter-making utensils.

ESTABLISHING A LONG LACTATION

The cow's first lactation period is an important one because in a measure it paves a path which she is inclined to follow in all her successive lactation period and everything should be done to induce a large flow of milk throughout the period, lengthening it as much as possible. Poor cows might be compared to many of our hilly, crooked roads of today, which are the results of ancient trails followed by animals or early settlers who had no intention of mapping out a road. They followed the lines of least resistance through the dense forest and as woods were cut down and settlers took possession, they continued to follow the established path. It is somewhat the ame with a cow. Establish a long lactation period at first and she will maintain it, not only in her own that follows, but she will impart the characteristic to her offspring.

Patented milk distributing device used in the New De Laval (sectional view)

Some big advantages that you can obtain only in the

NEW DE LAVAL CREAM SEPARATOR

GREATER CAPACITY: Without increasing the size or weight of the new bowl, its capacity has been increased.

CLOSER SKIMMING: The improved bowl design, together with the patented milk distributor, gives greater skimming efficiency.

EASIER TO WASH: Simpler bowl construction and discs, caulked only on the upper side, make the bowl easier to wash.

HAS SPEED-INDICATOR: Every New De Laval is equipped with a Bell Speed-Indicator, the "Warning Signal" which insures full capacity, thorough separation, proper speed and uniform cream.

EASIER TO TURN: The low speed of the De Laval bowl, the short crank, its unusually large capacity for the size and weight of the bowl, and its automatic oiling throughout, make it the easiest and least tiring to the operator.

WEARS LONGER: Due to its much lower bowl speed, high grade of materials used, and careful and exacting workmanship, the De Laval outlasts and outwears other makes by far.

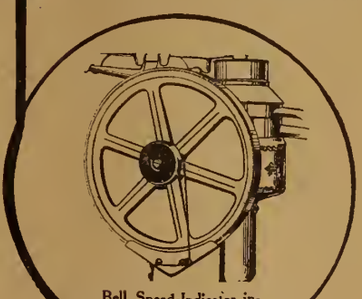
ASSURED SERVICE: In almost every locality there is a De Laval representative, able and ready to serve De Laval users.

If you haven't the spare cash right now, that need not stand in the way of your getting a New De Laval at once. We have an arrangement with De Laval agents which makes it possible for any reputable farmer to secure a De Laval on the partial payment plan—a small payment at the time of purchase and the balance in several instalments—so that your De Laval will actually pay for itself while you are using it and getting the benefit from it.

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butterworkers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER



Bell Speed-Indicator insures proper speed in every New De Laval

Cross-section of New De Laval self-oiling top spindle bearing

WHEN THE CALF SCOURS

When the calf gets scours it is an indication that something is wrong with the feeding. It has either been overfed, been given milk that is sour or cold, been fed sweet milk one meal and sour the next, or the pails or the troughs are dirty. Indigestion is the cause of scours, so in treating the trouble the first thing to do is to correct the conditions that brought on indigetion. Then give a dose of castor oil in milk and follow with the formalin treatment. This consists in giving one tablespoonful of formalin solution to 15½ ounces of water, in each pint of milk fed. Only half the usual There are other remedies but this has been highly recommended.
amount of milk should be given at a can be increased to normal again.

LIVE STOCK.

STRONG DEMAND FOR GOOD BERKSHIRES

J. R. Semple & Son, Truro, N. S., writes:—

"The demand for good Berkshire pigs has never been stronger. During the fall and early part of the winter we sold boars to the following:—One young boar to A. C. Servant, Yarmouth, N. S.; two to W. B. Mitchel, Halifax. One boar pig to George Oland, Coxheath, N. S., and one to Ralph Secord, Penobsquis, N. B. We shipped a nice bred sow to J. Mac O'-Brien, South Nelson, N. B.

These pigs were all sired by Woodstock Pat 39178. He was Champion Berkshire boar of the Maritime Provinces 1916-1917 shows, and his get seem to be following his example. The 1917 Champion sow was sired by him, and the heaviest prize-winners in the under year classes were sired by him. He is the best breeder, as well as the bst individual that we have ever owned. Some of our spring pigs will be sired by him. And some of his daughters have been bred to Concord Duke 6—47626. Concord Duke 6 is a litter mate to the boar being used at the Central Experimental Farm at Ottawa, Ont. Mr. Rothwell, (the assistant Animal Husbandman at Ottawa), said that their boar was the best for his age that he had ever seen, and Mr. Teasdale (the breeder), said that ours was just as good. We are looking forward to getting some extra good pigs from Woodstock Pat's daughters, and sired by Concord Duke 6.

Concord Duke 6 is out of a litter of fourteen, and all were raised. We expect a number of litters, quite a few of the pigs are already ordered. We still have the 1916 and 1917 Champion sows, besides a number of sows of the same breeding. Although it has been a pretty hard winter on pigs, as well as other stock, ours have come through first-rate and I wish you could see them.

Both the 1st prize yearling sow and the 1st prize 2 year old sow of the 1917 shows, have been bred to Woodstock Pat for April and May litters. We have also kept six of his daughters, all of them are bred to Concord Duke 6 for March, April, May and June litters. The Champion sow of 1917 and a daughter of the 1916 Champion sow, have both farrowed nice litters by Concord Duke 6. They are selling fast. It is no wonder considering their breeding.

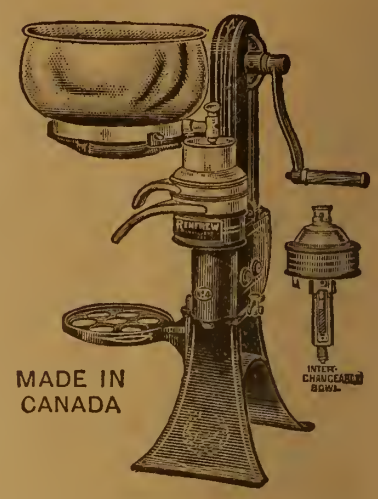
Butter Prices Will Be Maintained

THE Food Controller for Canada states: "I do not expect that the sale of oleomargarine will result in any reduction in the price of butter. The overseas demand is practically unlimited --- For years after the war Europe will require all the butter which Canada can produce for export, and the prices are certain to be high."

High prices for butter make every pound of butter-fat saved a source of extra profit that is a revelation to many farmers and dairymen. The

Renfrew

saves you about one half-pound of valuable butter-fat, per cow, per week, over other machines, even if they are in running condition, and much more if they are not running properly. Multiply this half pound by the number of cows in *your* herd and then calculate what this means to *you* in dollars and cents per year. Will it pay you to continue losing money by using an ordinary machine? The Renfrew gets all but the last three ounces of butter-fat in a ton of milk skimmed.



Which would you rather sell at present prices?
10 Gallons or 7 Gallons
of good firm butter-fat from the Renfrew which gets all but 1-10 pound in every 1,000 lbs. skimmed.
butter fat from other machines which lose a whole pound in 1,000 lbs. of milk skimmed.

Besides quantity, the Renfrew gets *quality*, Good first-class cream means globules of fat unbroken, and better, firmer butter. This high quality of cream is secured by the exclusive curved wing centre-piece of the Renfrew, which distributes the milk to the discs in thin sheets, and prevents the slapping of milk and breaking up of the fat globules, which occurs with the ordinary straight wing machines.

Our illustrated booklet gives Government Dairy Schools proofs of the close skimming. Also read about the Renfrew's exclusive interchangeable-capacity feature, self-oiling system and many other modern advantages. Write for booklet today.

NOTICE.—The Renfrew Separator illustrated here was formerly sold under the name "Standard," which identified it as a high efficiency cream separator. The name "Renfrew" has been used on the same machine for several years for our United States and foreign trade and under that name has become as popular in those markets as under the name "Standard" in Canada. Now the name "Renfrew" has been adopted for Canada so as to link the name more closely with that of our company and so that we can sell the machine under a uniform name throughout the world.

The Renfrew Machinery Co., Ltd.

Head Office and Works: Renfrew, Ontario

Eastern Branch: Sussex, N.B. Agencies almost everywhere in Canada

Our Other Lines: Renfrew Kerosene Engine, Happy Farmer Tractors, Farmers 2,000 lb. Truck Scale, Wood Saws, Grain Grinders.

13

HANDLING THE FLOCK DURING THE LAMBING PERIOD

This circular is intended primarily for boys and girls in lamb clubs and for those who have not had experience with sheep during lambing time. It may, however, contain a few suggestions which experienced sheepmen can use to advantage. Many handle their flocks successfully without providing themselves with all the equipment and supplies listed herein, but everything mentioned has been successfully employed in saving either lambs or their mothers. It is also true that many sheepmen carry their flocks thru the lambing period and experience few if any of the ewe and lamb troubles discussed in this connection; the fact that the troubles are discussed should not discourage anyone who is thinking of raising sheep.

In Preparing for Lambing—

(a) Plan the farm work so that the shepherd can keep a close watch over the flock both day and night.

(b) Keep the ewes that are about due to lamb away from the other kinds of live stock. Large animals may injure them; hogs greedily devour young lambs.

(c) In cold weather provide warm quarters, well bedded and exposed to the sun, but do not overlook ventilation. Give the ewes plenty of room (12 to 16 square feet each, unless closer crowding is necessary in order to keep the quarters warm). Close all openings thru which young lambs might creep and wander away.

(d) Have a few portable lambing pens, 4 feet x 4 feet or 4 feet x 6 feet. (Such a pen is the best place for a ewe and her lamb until the lamb is two or three days old.)

(e) Certain supplies should be on hand, such as:

1. Liquid sheep dip to be used as a disinfectant.
2. Epsom solts, castor oil, and raw linseed oil to be used as physic.
3. Tincture of iron, gentian and ginger to be used as a tonis.
4. Soap to place in water intended for injections to relieve constipation.
5. Tincture of iodine to be used on swollen udders and on navel cords to prevent "navel ill".
6. Swan-bill nipples for feeding milk to young lambs.
7. A metal syringe provided with a large nozzle and also a small one suitable for giving injections to young lambs.
8. A glass graduate for measuring doses of medicine.

Caring for the Ewe

During the Last Few Days Before Lambing, pen the ewe at night where it is intended she shall be until the lamb is a few days old. Avoid crowding and jamming in doorways and around feed racks. Give good, clean, palatable feed, consisting mainly of roughage.

When the Ewe is Giving Birth to the Lamb, do not disturb her so long

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18

as everything seems to be going well. If she must have help (which she should have if little or no progress is being made after much laboring), the first thing to do is to learn what position the lamb is in. To be delivered alive, it should be presented fore feet first, with the nose lying snug on the fore feet (this is the normal position for birth), or it may be delivered hind legs first. Before entering the ewe to get the lamb into the proper position, the hand should be disinfected and smeared with vaseline or oil. Care should be used not to tear the parts of the ewe, and it may be inadvisable for a person with a large hand to attempt the operation. Pull steadily on the lamb slightly downward toward the ewe's udder and use most strength in pulling when the ewe labors. Be sure to keep the head coming with the fore feet until the nose is exposed.

After the Lamb is Born, give the ewe close attention for several days. Note whether she casts the placenta (after birth) and whether her bowels are normal. Watch her udder. Milk her if the lamb does not take all of the milk. Do not expose her to cold drafts. Give her all the water she wants but not large quantities at one time and it should not be ice cold. Give her good feed, such as clover hay and oats; allow grain sparingly for two or three days after the lamb is born, unless she is in thin condition.

After the Lamb is a Week Old, the ewe must have plenty of feed until there is an abundance of grass; and abrupt changes in her ration should be avoided.

Do Not Worry if the Ewe Refuses to Eat for the First Three to Six Hours after Lambing, but if she continues to refuse feed, make sure that her bowels are in good condition. Four ounces (one-third pint) of raw linseed oil, or 4 or 5 ounces of Epsom salts dissolved in water, is a good physic. For a very quick-acting physic, 2 ounces (4 tablespoonfuls) of raw linseed oil with 4 ounces of Epsom salts may be used. To aid the appetite, give three times daily a teaspoon each of tincture of gentian and ginger in one-half pint of luke-warm water. If the ewe is in thin flesh, add a teaspoonful of the tincture of iron to each dose.

A Ewe Lacerated Inwardly or Failing to Fully Cast the After-birth after Lambing, should be washed out daily with injections of boiled water that has been allowed to cool, or with a liquid dip diluted 1 part to 100 parts of water.

When the Ewe's Udder is Swollen, keep it milked out and paint it twice a day with tincture of iodine until the swelling begins to go down, and thereafter paint it once a day until it is evident that further treatment is unnecessary. If pus forms, make an opening for drainage and wash the affected part once a day with a good disinfectant. Ewes with swollen udders should be removed to comfortable quarters outside the sheep barn, for their trouble may be caused by an infection that will spread thru the flock. Since their milk is often poisonous, their lambs should be taken away from them and fed by hand until the swelling subsides.. Be sure not to let the lambs nurse from other ewes, for this may spread the disease.

Sore Teats in ewes are most often caused by the formation of poc-like sores, but sometimes by the long, sharp teeth of the lamb. The first symptom of the poc sore is a whitish pimple or blister. As soon as the sores are discovered, they should be opened and washed twice a day with a solution of sheep dip, one part to twenty-five parts of water. If the lamb's teeth make the teats sore, about the only thing to do is to take the lamb away from the ewe. When the teats are very sore, the ewe refuses to let the lamb nurse; hence the shepherd should see to it that she is kept milked out.

Caring for the Lamb

When the Lamb is Born, place it and the ewe in a pen measuring 4 feet x 4 feet, or 4 feet x 6 feet. Little attention need be given the strong lamb, whose mother has milk, except to see that it finds the teat. If its mother has no milk, it is best at first to take a little from a ewe that has more than enough for her lamb. The next best thing to do is to feed whole cow's milk, using about two tablespoons every two or three hours. The milk should be heated to about 90°F. in a bottle placed in warm water. In order to give the milk at proper temperature, the bottle and the water should be in a pail which can be taken to the place where the lamb is to be fed.

A Lamb too Weak to tSand to Nurse should get a fill of its mother's milk as soon as possible. If it is anxious to nurse, back the ewe into a corner and hold the lamb to the teat and increase its anxiety to feed by patting it on the rump. If it refuses to nurse, draw some milk from the ewe and feed the lamb from a bottle until it gains in strength and develops a strong appetite.

One of the Best Ways to Handle a Chilled Lamb is to place all but its head in as warm water as the elbow can bear. As the water cools, put in more warm water to keep up the temperature. When the lamb becomes somewhat lively, take it out of the bath, and rub it briskly with a coarse cloth until it is almost dry. Then feed it, wrap all but its nose in a thick blanket or cloth, and place it in a warm place to sleep. Keep it away from its mother no longer than absolutely necessary. Always wrap a lamb in a cloth when placing it in artificially heated quarters.

When the Ewe Disowns her Lamb, try to get her to claim it. A ewe recognizes her lamb at first wholly by smell. This being the case, it may help to smear on her nose and on the rump of the disowned lamb some milk drawn from the ewe. Another procedure is to tie the ewe in a small pen where it is easy to hold her and force her to let the lamb nurse often and being tied it is difficult for her to get away from it. When the disowned lamb is one of a pair of twins, both lambs should be place in a pen next that occupied by the ewe so that she can see them, and both should always be put with her at the same time. In her anxiety to nurse the lamb she claims, she is likely to let the other one nurse also.

If a ewe with a good supply of milk is left without a lamb, an attempt should be made to have her raise one, an orphan or one not getting enough milk from its mother. If she has just lost a lamb, it is usually easy to get her to take another by immediately removing the skin of the dead lamb and placing it on the stranger intended for her. If this proceeding is not possible, the suggestions given above for getting a ewe to claim her own lamb may be employed.

Common Ailments and Diseases of Young Lambs

"Pinning" is a collection of sticky dung clinging to the wool around the anus. It should be scraped away with a stick or a corn cob.

Constipation is indicated by straining and distress in the attempt to pass feces, or dung. Injections of luke-warm soapy water should be given, and it will help if a tablespoon of castor oil or milk of magnesia (hydroxid of magnesia) is given.

White Scours in lambs are caused by digestive disorders which usually result from mistakes in feeding the ewe, and hence are to be avoided largely by giving the ewe clean, wholesome feed and not changing the ration abruptly. A lamb having white scours should be taken away from the ewe and allowed only a little of the milk. This can best be accomplished by milking the ewe out before letting the lamb nurse Milk of magnesia given as suggested for constipation will help to correct the disorder.

Acute Digestion sometimes seizes young lambs. It is marked by great distress and frothing at the mouth. Castor oil (a tablespoonful) is a good remedy.

For Sore Eyes put a drop or two of a 16-percent solution of argyrol in the eyes once each day. This should be done with an ordinary medicine dropper.

Navel Ill should be avoided by dipping the navel cord in a cup of the tincture of iodine soon after the lamb is born.

For Scabs or Poc-like Sores on the lips and nose, apply a fairly strong solution of sheep dip after the sores have been rubbed open.—By W. C. Coffey.

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THE HORSE

YOUNG COLTS WHEN WELL FED REDUCE THE COST OF FARM POWER TO LOWEST LIMITS

There are not a few farmers who act with their hores during the winter months much in the same way that they do with their implements. They are neglected when not in use and have many breakdowns in the busy season. This is especially true of the work horse, and the case of the young colt is omewhat similar. Every farmer knows that a machine with parts badly adjusted, or is of inferior quality of material is never a very satisfactory article. In the same way the young colt that has had careless attention paid to it during the first two or three years of its life will never become the spirited, healthy animal that his breeding gave promise. It is the first two or three years that determine the utility of the colt. The winter treatment is the factory for the motive power in hore flesh at the farm, and neglect of the colt is similar to the carelessness if the manufacturer who sends out his manufactured article in bad shape and poor quality.

Influence of Early Care

How careful the interested dairyman is over the treatment and progress of the heifer calf that he has in view to become capable of producing a high yielding record. She must be able by virtue of her good health to exercise her qualities fully developed. The rearing of the young horse demands the same interest, the breeder must see the end from the beginning and know what results to expect from the treatment given.

The life history of all farm live stock can be written when a study of their early surrondings and treatment is granted, and colts are more susceptible to neglect than any others, and never outlive its evil influences. Spirit in a colt is its natural heirloom and easily retained, but as easily destroyed. To retain this natural quality and encourage its further growth ought to be the aim of every rearer of horses. The most vital period in their fife, where spirit and courage can be crushed, is at weaning time and two succeeding years.

Danger of Lonely Stall

How few consider that confining a colt to a dark, lonely, and badly ventilated stall, is one way of preparing him to become an inefficient labor machine. Many of the ills that come to it in after life, are contracted in the dark and isolated corner. Like an exile from domestication's influence, he quietly suffers to permanent injury to the eyesight, to the hoofs, and the digestive organs, that finally result in a conformation ill able to defend itself against attack disease, or bear up in the strenuous day of labor on the farm. Eyesight in a horse is a very valuable asset and many more horses are partially blind and have eye diseases than many farmers are aware of. And the dark stable is the chief cause.

A Question Worth While

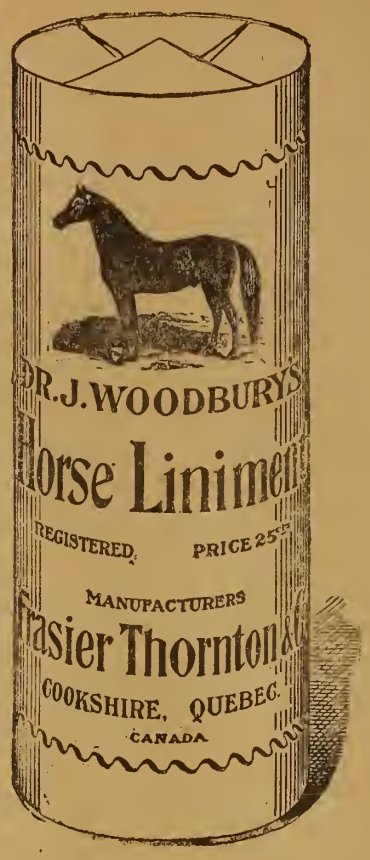
Many a horse has become diseased, nervous or vicious, through incompetence or inhumanity of stable treatment of the colt. If so much depends upon the treatment of the colt the question naturally arises; who does the feeding and the caretaking. Is it the owner himself, or anyone that happens around, giving the colt a variety of attendance and feeds, good, bad or indifferent. The power and longevity of a horse is in exact ratio to the intelligent care and feeding he receives at all times, and the colt stage most necessary of all. In the winter months, feedinig by hand must be done. Who does the feeding? Is he competent? This is a question worth while to the horse industry.

The first lesson in hand-feeding oung colts has to be taken from nature. When the horses roamed the prairie wild and free, speed of limb was their only method of saftey when their natural enemies appeared, and nature biult them with a small food carrying capacity. Therefore they were always ready for the flight. Even the young colt, that is only an hour or so old, is as fleet of foot, if not fleeter, than its mother. One or two sucks seem to satisfy it at one time, but it requires them often. And therein lies the success of the feeder of the young colt after it is weaned. Feed of good quality, fed in small quantities, and fed often, is preparing the horse to become the best economic motive power on the farm. The farmer who allows his colts to get as thin in flesh in winter as it takes in summer grass and freedom to bring them back again to noormal, is mis-spending his time and losing money on the horse enterprise as well as paying a heavy bill for labor.

Feed and Labor

Young horses must be kept growing and improving all the time from the day they arrive to the time they are matured and competent for their heavy work. For this reason it is necessary that the caretaker should keep the foals, yearlings, two-year-olds and three-year olds fully supplied with an adequate amount of nourishing food every day throughout the winter. They must keep on thriving from one month's end to another, without a break or setback through one week or one day's inattention.

If the newly-weaned colt has to rustle in a pen or yard with animals a year or two older, the chances are that however well fed the bunch are, collectively, the young fellow will fare badly in the struggle. Exercise is necessary on every suitable day, but individual and special feeding must be given the colt that had been weaned in the past fall. Oats are preeminently the horse grain, and though expensive meantime they can be very profitablly fed to a young colt in his first year. "Though it is the eye of the master that fattens his cattle," the



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recognized average allowance for colts measured in oats, is as follows: Up to one year of age, from 2 to 3 pounds from one to two years, 4 to 5 pounds; from two to three years of age, 7 to 8 pounds. The allowance of hay should be all they will eat; a liberal allowance before them all the time. At the colt age they are in their natural stage and the natural appetite of the colt will balance its needs in the matter of hay. But when once they are broken in to harness and work, and have fasting and working spells alternately, then a limited quantity of hay should be given and more grain. If any farmer put in his two-year-old colt in harness for training, the grain ration must be increased to 8 pounds and a limited quantity of hay, and the three-year-old in training as much as 12 pounds.

Liberal feeding must be counterbalanced by an abundance of out-door exericse. In no other way can colts eb ruined so surely and permanently as by liberal feeding and close confinement. Each day from three to ten hours should be spent in the open air, acocrding to the condition of the weather and other circumstances. The more feeding the more exercise is required; a highly fed colt should be out of doors for eight hours a day. A colt will grow rapidly when liberal and nourishing feed is given him, provided he gets the opportunity for plenty of exercise. The skill of the feeder is shown where the balance of feed and exercise is finely adjusted.

Roots and Water

Roots have a cooling and beneficial effect on the dry and concentrated winter feed of the colt, and one or two mangels or turnips will be a beneficial addition to the daily ration.

As to water they hould have all they want at all times. In stinting the young colt his quantity of water too much is taken when he gets a chance, and in the winter time when it is ice cold, this will do irreparable damage to the digestive organs and threfore stunt his growth. Even thirsty colts will sometimes refuse to drink ice cold water in the morning. Make arrangements to have water before them at all times in the manger.

At the approach of springtime teething troubles bother the colt and ice cold water gives pain and hence many a colt is cruelly treated when not accommodated with water of a lower temperature.

And finally a word about the feeder. The man who looks to the comfort of the colts during each winter, feeding and caring for them with intelligient consideration as a unit of efficiency in the horse breeding industry, as well as the best medium in keeping the cost of farm horse power down to its lowest imits.—O. V. T.

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Thestudent seeking an intimate acquaintance with the points and characteristics of the horse, that he may become an expert judge and competent buyer and breeder, will overlook many little matters of considerable interest, unless his attention is directed to them by a trained horseman. Some of these will be set down here, and naturally those relative to the head will first be considered.

Starting with the ears it not only is necessary to remember that these organs should be of good quality and proportionate in size to the body of the horse, but that they are sound. The ear of "quality" is comparatively small, and is covered with fine skin and hair. Long, coarse hair in the ears denote common blood, grossness and phlegmatic temperament. It is most often seen in the heavy draft horse and usually has been removed from the ears of the runner, trotter, carriage or light work horse. If clipping has been done and it is noticed that the hair ("feather") has also been clipped from the fetlocks, depend upon it that the horse is coarse and of poor breeding for an animal of light breed. If the hair in the ears is long and coarse, similar coarse hair will be found under the jaws, upon the legs and under the belly. Such hair is highly objectionable in horses of light breed, and relatively so in heavy draft horses, America nhorsemen objecting to the great profusion of hair characteristic of Shire horses considered of show type in England. Fine hair grows from thin, good quality skin, and that usually overlies bone of dense ivory texture.

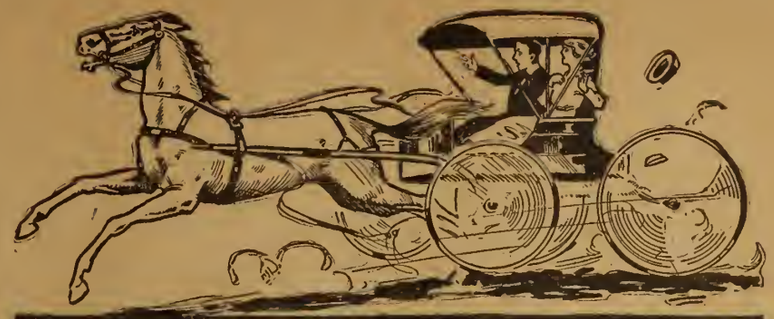
Small ears and small eyes commonly go together, and such features are objectionable. They once were common among the French breeds of draft horses, but are being bred away from year by year. The ears should be alert, perfectly under control, and directed at an angle of approximately 45 degrees. Rigid ears denote deafness or paralysis from lockjaw. Restless ears may indicate deficiency of vision, excessive nervousness or actual vice. Ears laid back make the horse "scowl" as it is called, and one i warned to look out for biting and kicking.

When buying a horse remember to handle the ears. If the horse objects, the reason may be a previous attack of "poll evil," disease of the ears, or the fact that a twitch has had to be put upon the ears to make shoeing possibile. The examination also will show if the ears are kept erect by meanrs of a silken thread tied from one base to the other, or kept still by means of a leaden pellet suspended in ear by a thread stuck to the skin with hoemaker's wax. One should also make sure that a split ear has not been temporarily glued together and that there is no discharging fistula at the base of the ear, or excoriation of the skin indicating the use of the twitch.

A white star in the centre of the forehead is regarded as a "beauty spot," but it should be natural, especially in a purebred registered horse, in which it is a mark of identity. An artificial star made by the application of a boiling hot potato, boiling water or a caustic always has a patch of bald skin in its centre.

Coming to the region of the eyes remember that a deep depression above the eye, or supra orbit, as it is

(Continued on page 406)



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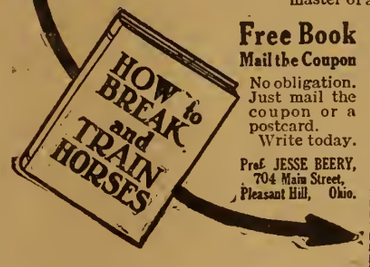

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POULTRY.

FEEDING YOUNG CHICKENS

Young chickens should be fed from three to five times daily, depending upon one's experience in feeding. Undoubtedly chickens will grow faster when fed five times than when fed only three times daily, but it should be borne in mind that more harm can be done to the young chickens by over feeding than by under feeding.

Young chickens should be fed not more than barely enough to satisfy their appetites and to keep them exercising, except at the evening or last meal, when they should be given all they will eat. Greater care must be exercised not to feed young chicks that are confined more than those that have free range, as leg weakness is apt to result in those confined.

The First Feed in 24 Hours

The young chicks may be fed any time after they are 36 to 48 hours old, whether they are with a hen or in a brooder. The first feed may contain either moistened hard-boiled eggs, johnny-cake, stale bread, pinhead oatmeal, or rolled oats, which feeds or combination may be used with good results. Mashes mixed with milk are of considerable value in giving the chickens a good start in life. The mixtures should be fed in a crumbly mssh and not in a sloppy condition.

Johnnycake composed of the following ingredients in the proportions named is a very good feed for young chicks: One dozen infertile eggs or one pound of sifted beef scrap to 10 pounds of corn meal; add enough milk to make a pasty mash, and one tablespoonful of baking soda, and bake until done. Dry bread crumbs may be mixed with hard-boiled eggs, making about one-fourth of the mixture eggs, or rolled oats may be used in place of the bread crumbs.

Feed the bread crumbs, rolled oats, or johnnycake mixtures five times daily for the first week, then gradually substitute for one or two feeds of the mixture finely cracked grains of equal parts by weight of cracked wheat, evenly cracked corn, and pinhead oatmeal or hulled oats, to which about 5% of cracked peas or broken rice and 2% of charcoal or rape seed may be added. A commercial chick feed may be substituted if desired. The above ration can be fed until the chicks are two weeks old when they should be placed on grain and dry or wet mash mixture.

Place Dry Mash in Hoppers

After the chicks are 10 days old, good growing mash, composed of two parts by weight of bran, two parts middlings, one part corn meal, one part low grade wheat flour or red dog middlings, and 10% sifter beef scrap, may be placed in a hopper and left before them all the time. The mash may be fed either wet or dry; if wet, only enough moisture (either milk or water) should be added to make the feed crumbly, but in no sense sloppy. When this growing mash or mixture is not used, a hopper containing bran should be accesible to the chickens at all times.

After the chickens are two months old they may be fed four times daily, with good results. After they are three months old, three feedings a day are neough.

Milk Hastens the Growth

As soon as the chickens will eat the whole wheat (usually in about eight weeks), cracked corn and other grains, the small-sized chick feed can be eliminated. In addition to the above feeds the chicken's growth can be hastened if they are given sour milk, skim milk or buttermilk to drink. Growing chickens kept on a good range may be given all their feed in a hopper, mixing two parts by weight of cracked corn with one part of wheat, or equal parts of cracked corn, wheat and oats in one hopper and the dry mash for chickens in another.

The beef scrap may be left out of the dry mash and fed in a separate hopper, so that the chickens can eat all of this feed they desire. If the beef scrap is to be fed separately if is advisable to wait until the chicks are 10 days old, although some poultry men put the beef scrap before the young chickens at the start without bad result.

Chickens confined to small yards should always be supplied with green feed, such as lettuce, sprouted oats, alfalfa or clover, but the best place to raise chickens successfully is on a good range where no extra green feed is required. Where the chickens are kept in small, bare yards fine charcoal, grit and oyster shell should be kept before them all of the time, and cracked or ground bone may be fed. The bone is not necessary for chickens that have a good range.

BREED ONLY WINTER LAYERS

If winter egg production is desired, only winter layers should be bred. It is easy to elect the laying hen. Her comb is bright and red and her pin bones will be well spread apart. Prof. Kemptster suggests that observations be made during the winter so that the poultry keeper will know which of his hens are good layers. These sould be marked so that they may be used for mating next spring.

It is folly to breed from the entire flock. By selecting a few of the best layers, the most progress will be made. Where no selection is made, the poor producer will be used for breeding, because even the loafers will lay in spring. It is also a mistake to breed from the immature and undersized stock. Over-fat, coarse-boned hens or those which crop behind should never be put in the breeding pen. The best place for them is on the table. Pick out the good breeders and note the improvement. They should be placed by themselves with a good vigorous male when breeding time comes. By using a smaller number of males the poultry man can afford better stock.

MAKING THE SMALL FLOCK PAY

The following interesting acocunt of the handling of a flock of hens in a city backyard is contributed by Geo. Robertson, of the Poultry Division Experimental Farm, Ottawa. Though written with the idea of suggesting to city people a profitable means of producing a very necessary foodstuff in these war times, the article will be of interest to poultry keepers in the country as well. Mr. Robertson's letter follows:

A dozen hens in the backyard should supply the avcrage family with new laid eggs more cheaply than eggs can be bought during the winter and as a business proposition such hens pay. Further, to demonstrate this, a small experiment was conducted by the Poultry Division of the Experimental Farm, Ottawa. The details are supplied by Mr. George Robertson, who kept the flock in his own backyard.

The birds were not selected with a view to the greatest production possible, but rather to the securing of such a flock as any amateur might go out and purchase. The flock consisted of twenty-six birds—four of which were three-year-old Brack Leghorn hens, six White Leghorn pullets and one Black Minorca pullet hatched in May and the balance were crossbreds, Black and White Leghorns, hactched in June. They were not put into winter quarters until well on in November and it was December 7 before the first egg was laid.

An old woodshed about eleven by twelve feet was utilized as a poultry house. Inthe south side, fifteen inches from the floor, a line of windows two feet wide was placed and above these

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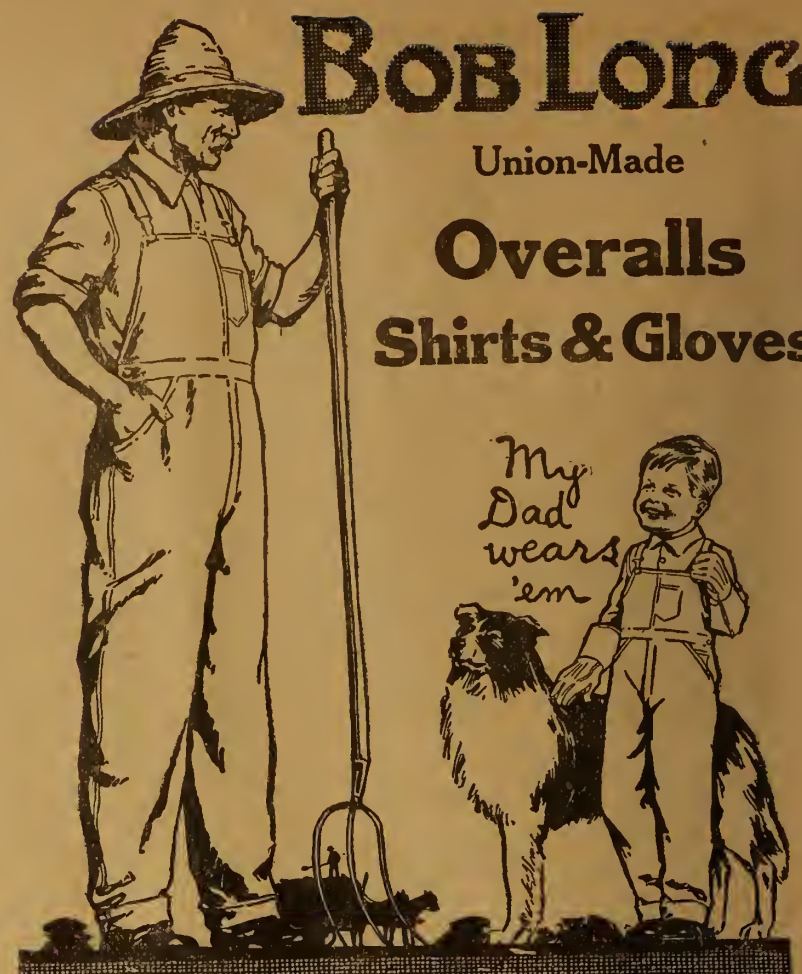

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an opening about eighteen inches in width was made across the entire front. In this a frame covered with light cotton was hinged. This frame was kept hooked up to the ceiling through the day, except in the severest weather. Hoppers of oyster shell, beef crap and dry mash were kept constantly before the oock. The dry mash consisted of bran, middlings and cornmeal, equal parts, one-half part gluten and one-half part blood bour. A deep straw litter was kept on the floor into which all whole grain fed wa scattered.

In the morning mixed grain, usually cracked corn, wheat and oats, equal parts was given. At the same time warmed water was given. At noon the water was renewed and all the kitchen waste, such as vegetable parings, was fed. Usually at this time a few handfuls of mixed grain were also scattered. In the winter, as it is always dark before the night feed, which consisted of mixed grain, was given, an electric light was turned on for a couple of hours and the fowl allowed to scratch to their heart's content.

MANY USES FOR COLONY HOUSES

Every poultry keeper and farmer can find use for several small houses from six to ten feet square. They are needed particularly in early spring to house the brooders and early broods. They are useful to raise the chicks during the summer and fall. They make excellent quarters in which to confine an fatten the cockerels for breeders.

With a few rods of wire fencing and half a dozen posts a choice pen of breeding stock can be separated from the general flock and their eggs served for hatching. A good type of colony house is made of two piano boxes and covered with roofing paper. Remove the tops and backs and set the boxes on 2 x 6 runners so that one top will fill in the floor and the other can be used at the back. The backs of the boxes will give enough material to build the roof and the door. Put a window each side o fthe door. Cover the building with a good grade of roofing and you will have a house that will last many years.

EGG EATING HABIT NOT HARD TO CONTORL

Occasionally a hen will acquire the egg-eating habit. This is due to one of two causes, either the hen is not being supplied with enough grit, and eats the shell for the grit contained in it, or by some accident an egg has been broken and she has learned that it gives her a good supply of protein. Both causes are due to the mismanagement of the owner. He should supply grit ofr his den and should provide a place where eggs may be laid wthoutdanger of breakage.

Once a hen has acquired this bad habit, the best thing to do is to kill her. Especially valuable hens may be broken of the habit by placing pepper in an egg which they are to eat. Another method of preventing a hen from eating the egg she lays is to make a nest of a piece of burlap suspended from the sides of the nest box and make a hole in the centre of the burlap the size of the egg. When the hen lays her egg it will drop through the hole out of reach.

STEAM OLD FOWL BFORE ROASTNIG

The saying "Tough as an old hen" has made old hen uninviting to most of us. However, old hen may be made most tempting by proper and thoughtful cooking.

Instead of putting the hen in a large quantity of water and boiling the flavor out into liquid, try steaming. If you hove not a regular steamer, make one out of a kettle and colander. Steam the fowl from one to two hours until tender.

It may then be stuffed and roasted, basting with some of the liquor in which it has been steamed, and is very tender and tasty.

After steaming, the fowl may be cut into uieces, the pieces browned in a frying pan, covered with gravy made from the liquor, thickening and seasonings, and allowed to cook until well fiavored. The gravy may be varied by using in it tomatoes, green or red peppers chopped fine, browned onions, celery seed or salt, or mushrooms. In recommendng mushrooms it is assumed that a home-canned or home-dried product be used.

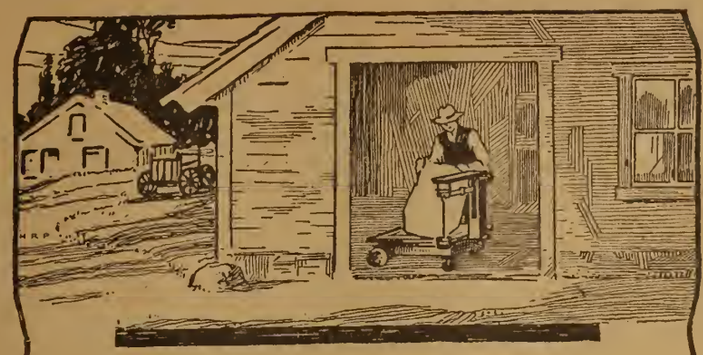
DISTINGUISHING GEESE AND GANDERS

It is a difficult matter to tell the sex of young geese. The gander has a longer neck and a thicker, heavier head than the goose. He also stands a little more erect. The body of the goose is deeper and she is generally more compact and closely built. If a dog or other intruder come near the ganders will put down their heads and hiss, while the geese hold up their heads. The voice of the gander is louder and shriller than that of the goose. An infallible test is to take each individual, turn it over on its back and with the fingers press out the private parts. Those of the gander are longer and slenderer than those of the goose. By examining a pair of older ones in which you know the sex, you can become familiar with the way they appear, and thus can tell the younger individuals.

TO DRAW A FOWL

Place the fowl on its back, and make a slit lengthwise in the skin of the neck from the body to the head; free the neck from the skin, and cut off the neck as close to the body as possible; then cut the skin, leaving a flap at least three inches long hanging to the breast. Loosen the crop and the windpipe, and insert the first finger, keeping it close to the inside surface of the body; work it round, breaknig all the ligaments with which it comes in contact, thus loosening the contents of the carcass. Be careful not to thrust the finger into the centre, for if the gall bladder is broken, the gall will impart a bitter taste to whatever it may touch. Turn the bird, slightly enlarge the opening at the vent, insert the finger and loosen th insides from the carcass at that end. Turn the bird again, and place it on its back; press the breast with the thumbs and push out the gizzard by the hole at the vent; take hold of it and pull steadily, whn the whole of the interior should be brought away entire. If all the insides are removed, little washing will be needed. Wipe it out with a damp cloth, or rinse quickly and wipe dry. If the breast bone protrudes too much, put a cloth over it and beat it down flat, putting something like a pestle inside to pound on.

When the hens are inclined to be lazy, throw a few handfuls of grain over the litter so as to set them to scratching.



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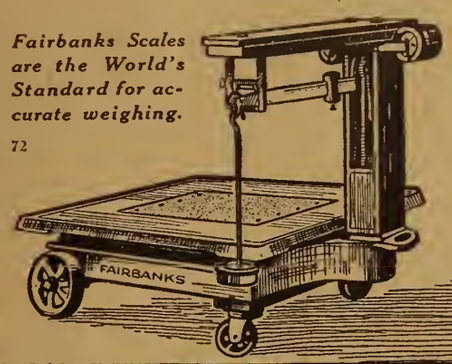

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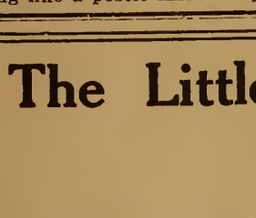

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

A QUESTION OF HONOR

"Hello, young fellow! Any trout in brook?"

In response to this salutation, Orlando Fudge, a bright farmer's lad of some sixteen summers, held up a string of meadow trout, ranging from one-half to a full pound each.

"Zounds, boy, that is a fine string. I will give you two cartwheels for them."

"Much obliged, sir, but father has all the cartwheels he needs at preent."

"Oh you don't catch on, my boy. I will give you two brand new silver dollars; understand that, hey "

"Reckon that is all they are worth, tranger. Guess you can have them."

The negotiatons completed, Mr. Thompson tucked the fish in his basket and proceeded down stream. He had only gone a few steps, however, when he turned and saw the lad was watching him.

"No harm fishing here young man?"

"Oh, no, fish all you have a mind to sir. Father don't post his brook. Should think he would, though. He is cranky enough about everything else."

Now, there was no disrespect intended in this remark of Orlando. The fact was, everyone that knew old John Fudge had called him cranky until it had become a misnomer in the neighborhood.

"You don't mean it. Well, my boy, here is my card, and when you come to the city, call and see me. By the way, what is your name?"

"Orlando Fudge, sir."

"All right, good by, Orlando."

"Good by, ir."

Orlando took the card and read, "C. F. Thompon, Gen. Mgr. Mainard & Goddard, Department House, City of W————."

"Oh, yes," said he, speaking aloud to himself. "I know where that is. I was in his store last May when I went to the circus. I will go up and see him sometime, for I am going to leave here pretty soon if father"——

At this juncture of his soiiliquu, he thought of his mother, and said : "Well, I guess I'll stay a while longer. I don't want to leave mother," and dismissed the subject from his mind.

Orlando Fudge had never been discontented with his lot, but this first money that he could call his own, awoke in him a new sense of life, and each time that he held the two silver dolalrs in his palm, they grew, and placing them under his pillow that night he dreamed of a world he had never seen, and of experiences he knew nothing of, but longed with the rising sun to investigate.

He had been reared on an isolated back-country farm, located in a valley rich with broad meadows, fertile pastures and fine elms. The house was antiquated and irregular. The windows sagged. The stone chimney was out of all proportion to the structure surrounding it, and crumbling with age. God's eternal sunlight seldom penetrated the shade and clinging vines sufficient to throw its beams into any room. The old house stood back from the public highway, a mile at least from its nearest neighbor, yet Orlando had never yearned for other surroundings, had never thought to be lonesome. All nature had been his playmates. The domestic animals, including his faithful dog, his playmates. His mother, God bless her, one of those sweet souled women that brighten the dark piaces on earth with their smile, christening the hard things of life with their silent tears, forgiving but never quite understood; and a contrary, close-fisted, suspicious, one-sided chap for a father. Such were his daily companions.

A few weeks subsequent to his meeting Mr. Thompson, Orlando Fudge found himself master of ceremonies, so to speak. His father's guardian angel had tired of trying to make him like other people and he had gone—gone the way of the world.

The duties of carrying on the farm devolevd upon him and his mother. A labor of love under adverse circumstances. Business relations took him to the city where he frequently met Mr. Thompson. Returning from one of these trips, he approached his mother on the subject of selling the farm and going to the city to live .

So the stock and crops were sold. The old home posted, "For Sale or Rent." The beautiful trout stream, where Orlando was wont to fish on quiet summer days, was leased to a city club and the fields and haunts of his boyhood knew him no more for a time.

A position was offered him at the Department Store in W———, and a new book, with the index finger pointing at a new chapter in ife's drama, was opened to him. How well he read that book, future developments will tell.

Fear was a composite he knew nothing of as he demonstrated shortly after his iadvent into the new position. Standing at the store door one morning, a few weeks later, he was hailed by Richard Jarvis, a fellow clerk.

"Say, Fudge, isn't that a dandy team. Wonder who owns that pair of blacks? Seldom see such a team as that on a hay wagon, especially on an old farmer's."

At this moment, Orlando glanced at driver and hores and replied: "Why that is Mr. Drake from down our country. I know him well. He always has the best team in town. Who would think they had pulled that load ten miles this morning by the way they drive?"

"Gee, I would like a chance to drive that team, Fudg."

An hour later a cry was heard in the street. "Look out for the runaways!" and coming down the road at breakneck speed were Mr. Drake's blacks, heads up. Rattling the old farm wagon with its empey rigging swaying from side to side, on they came turning neither to right nor left, but dashing madly through the main thoroughfare. Men, women and children frightened by the sight and sound, hurried to the nearest place of afety. Teams of all descriptions turned out of the path. Quick as thought before anyone could grasp the situation, Orlando Fudge rushed into the street, and as the maddened horses flew past, grabbed with both hands the rear railing of the rigging, swinging his body with a tremendous effort over into the empty wagon, and crawling on his hands and knees until he could reach the reins.

"He'll be killed! He'll be killed!" the crowd cried, or held their breath in an anxious suspense. But soon was heard "Brave fellow," for with firm and steady hand he tightened the reins, bringing the frightened horses completely under his control, just in time to turn into an alley between two brick blocks not more than twelve feet apart. No one was hurt and nothing broken.

Before the enthusiastic crowd could gather and offer congratulations, Orlando was back at his post of duty, as unconcerned as though nothing unusual had happened.

The news of his adventure, pluck and coolness had spread very quickly and he soon found himself surrounded by a coterie of admiring friends.

"Well," said Mr. Thompson, a day or two following the runaway, "reckon you can manage a team all right, Fudge . Think I will put you on the two-horse delivery. You can have a helper, but everything will be in your charge for prompt and safe delivery and care of the team. All goods marked C. O. D. you must collect and render account to the bookkeeper at the desk every night; understand?"

"Yes, sir, Mr. Thompson, and I thank you, because I love to be out-of-doors. It has always been my life."

Now, John Sharp, the head clerk, looked upon these proceedings with envious disfavor. The fact was, he had never quite liked this country boy (he could not have told you why) with his plain outspoken ways, and he felt that Mr. Thompson was putting too much confiedence in him. The weeds of jealous discontent were wrangling in his brain, and he felt that he must do something to rid the establishment of the presence of what he considered an enemy.

A few weeks later complaints came in that several customers had received no credit for money paid. Their books and statements did not agree. Investigation showed a shortage of about two hundred dollars. Who had collected the money? Mr. Thompson questioned each clerk closely, with no results towards unravelling the mytery. Finally he consulted with John Sharp. "Well," said John, "I have seen a few books marked '"Pd. O. F.' That must be Orlando Fudge's way of receipting,"

"Why haven't you spoken of this before, John "

"Well, sir, I supposed you had given him permission to do so."

At this reply, Mr. Thompson looked at John, and replied: "I cannot believe that boy has stolen the money."

"But sir, how else can you account for it? I tell you he is a sly dog, and then you know the best of them will bear watching."

At this, Mr. Thompson with a heart full of sorrow, felt that Orlando must be the embezzler. Duty demanded that, if guilty, he should be punished. That night he called him to the office and told him plainly how matters stood. Orlando protested innocence.

"I haven't a cent of your money, Mr. Thompon—not one cent."

"Oh, don't talk that to me, Orlando You must have it, and if you do not make good at once, I shall be obliged to arrest you for false returns."

"All right, sir. You can arrest me, but to pay you is to admit that I took the money, and I shall not own up to theft."

Argument was useless. He would not yield, so he was arrested and locked up, pending trial. His mother, worried and anxious beyond all measure over these serious charges against her boy, came and begged him to let her pay the money, secure his release and return with her to the dear old farm, away from temptation and unjust accusation.

But Orlando said: "No mother; I am innocent of this charge. I will go to prison before I will own to a theft I did not commit."

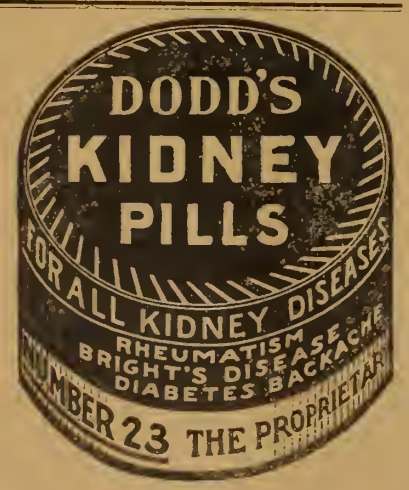
So with tears streaming down her troubled face, and a heart bursting with love and sympathy, but loyal in her belief of her son's innocence and purity, she left him. She engaged as counsel a Mr. Williams, to defend him. Lawyer Williams felt that in view of the evidence, his chance to win the case was very slim indeed, so he advised Orlando to make a clean breast of it, admit his guilt and throw himself upon the mercy of the court for a light sentence.

"What, confess to something I did not do? Never, sir, never!" And Orlando stood before him, the embodiment of truth and young manhood.

"Well, it is up to you, Orlando. Mr. Thompson says that out of consideration for four mother, if you will confess and pay the shortage, he will go on your bond. Then by and by the prosecuting attorney will "quash" the indictment. Now it is my advice that you do this as the very best way out of your predicament, and for the relief that such a course will bring to your heart-broken mother." Then looking squarely into Orlando's face, he said: "Orlando Fudge as your attorney, I claim the privilege of telling you that you are guilty."

The words had scarcely left his lips ere he was lying flat on the cell floor. Orlando had struck him a telling blow and he had fallen. The jailer heard hts fall, and, rushing in, seized Orlando and placed him in a dungeon for safe keeping.

The whole jail was in an uproar. Mr. Williams soon regained himself, however, and the assistants advised him to try the prisoner for assault as well. But he said:



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"No. that boy is innocent and I will clear him. I insulted him and he resented it. There is a terrible mistake here somewhere. Had he been guilty, he would have hung his head in shame."

A chorus of voices exclaimed:

"Yes, it looks like it when he knocks down his attorney. Oh, he's a bad 'un, Mr. Williams; a bad 'un."

"You leave that to me," replied Mr. Williams, and going at once to Mr. Thompson's store, he obtained the names of every patron whose books showed money paid and receipted "O. F." He secured a postponement of the case. He summoned everyone who held uch books into court the following morning. Not a word had passed between him and the prisoner.

When Orland was brought to the dock, he expected to be found guilty of both theft and assault. The prosecuting attorney stated the case and said that as the evidence was overwhelming he should ask the court to find the prisoner guilty before the law and that he be sentenced to jail for one year and to pay a fine of three hundred dollars.

As soon as Mr. Williams could answer he threw a thunderbolt into the courtroom by demanding the release of the prisoner. Calling on Mrs. B—— as a witness. he put the question:

To whom did you pay the last credit on your pass book?"

"To John Sharp," was the reply.

"Did you examine the book to see how it was receipted?"

"No, I supposed it was all right, as I have paid hi mbefore."

"Have you ever paid money to the prisoner?"

"Never but once. Then I orIdered the goods sent to me .C O. D."

After examining two or three more witnesses. an dthey all swore that they never paid Orlando Fudge, except for such goods as were sent C. O. D.. Mr. Willamis, addressing the court. said:

"May it please your honor, I have a dozen witnesses here, all ready to tetify that they never paid the prisoner one cent on their books, but that John Sharp collected the money and receipted 'Pd.. O. F.' Shall I proceed "

"No. that is sufficient."

"Then," sad iMr. Williams, "I demand that John Sharp be arrested as the real embezzler."

John Sharp was arrested. He was caught in his unprnicipled trick to undo his companion. His jealousy had worked his destruction. "The way of the trangresor is hard."

John Sharp went to jail. carrying a consciousness of his own downfall.

Orlando Fudge returned to Mr. Thompson's store, a faithful clerk. with no shadow of dishonesty surrounding him. He had been tried and found true, and is today the owner of a large wholesale house and doing a flourishing business. The old farm has been reclaimed. the house remodelled and beautified; the birds never sang sweeter than there on a May morning.

It has become a mecca for Orlando's numerous friends. for he is a man of the world today, respected by all who know him.

Mr. Thompson. Lawyer Williams and Orlando Fudge form a trio of boon companions. often wandering in the fields or trolling the trout brook together; and to the eyes of his aged mother, Orlando is a jewel, brighter and more lumininous than any star that decks the diadem of a king.

DAVID HAROLD JUDD.

Luncheon Dish.

2 c. dried bread crumbs, 1 c. chopped cold potatoes, 1 small minced onion, ¼ tsp. each, salt, pepper, sage.

Mix thoroughly, moisten very lightly with milk. Melt 2 tbsp. drippings in a frying pan and when hot turn in the crumbs and toss lightly with a fork. Cover closely and brown over a slow fire without stirring. Turn out and serve at once.

Oatmeal Muffins.

1 c. cooked oatmeal, ½ c. milk, 2 tbsp. sugar, ½ tsp. salt, 4 tsp. B. P., 1½ c. flour, 1 egg, 2 tbsp. melted butter.

Mix and sift flour, sugar, salt and B. P. Add half the milk and the egg well beaten. Mix the remainder of the milk with the oatmeal and add to dry ingredients. Beat thoroughly and add melted butter. Bake in muffin tins.

Crumb Cake

1 c. brown sugar, 1 tsp. cloves, 4 tbsp. butter, 1 tsp. cinnamon, 1 tsp. soda, 1 c. buttermilk, 1¾ tsp. soda.

Mix butter, flour and sugar together until it crumbs and take out ¼ to sprinkle over cake batter just before putting into oven. Mix the other ingredients together, sprinkle with crumbs and bake in moderate oven.

Potato Scones

Moisten cold mashed potatoes with milk or cream, then work in 1 tsp. B. P. and sufficient flour to make a stiff dough. Roll out, sprinkle with flour, cut into rounds and cover with beaten egg. Dip in flour and bake on hot griddle.

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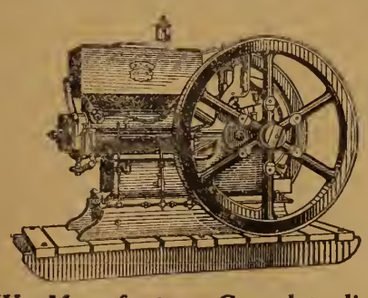

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RHEUMATISM

Needs Strong Medicine Decided Syracuse Man Who Suffered 36 Years Before, at Last He Found A Cure.

WILL SEND FREE TO ALL WHO SUFFER

"You can't cure Rheumatism with liniments, cheap uric acid solvents, starving, sweating or dosing your stomach with drugs that either ruin the digestion or are so weak they do little more than scratch the surface of the disease," says F. H. Delano of Syracuse, N. Y. Rheumatism is deep-seated, hard to shake off for good as everyone who suffers from it knows, and it needs medicine which, while harmless to the stomach, is strong enough to take right hold to do any permanent good.

Mr. Delano who suffered from all the torturing, twisting pains of rheumatism for 36 years, found at last, a strong but harmless medicine compound that cured him. As he took it, all those years of accumulated soreness, pain and stiffness just seemed to melt away and vanish. THIS REMEDY IS WORTH TRYING. If you suffer from rheumatism, let Mr. F. H. Delano send you a generous package of his great medicine FREE. Don't send any money. He wants to give a package free to every one who needs it. Don't suffer another day from rheumatism if this package will end it, but write at once to F. H. Delano, 787-C, Syracuse, N. Y., and get your package right away. Because of the great expense, not more than one free package can be sent to an address.

FOOD VALUES

Dr. Oliver Wendell Holmes, of blessed memory, once wrote: "The practice of medicine consists largely in putting drugs of which we know little into the human stomach of which we know less," This of course, an epigram, and while it is unfortunately to some extent true, that it is very much less true now than when the genial doctor penned it.

While it must be admitted that medicine is far from an exact science, there are certain departments of medical knowledge which approach exactitude. Such are anatomy, chemistry, and to a lesser degree the physology of food assimilation. With a normal digestion the choice of food is usually left to habit. For instance, I have made shredded wheat biscuit a breakfast for so many years that I feel lost without it—apropos of which a friend once sent me the following from Limerick:

"I never ate an old straw hat.
I never mean to eat one;
But if I do 'twill be a real
And not a shredded wheat one."

Now I trust you will pardon me if to make plain the point I wsh to emi phasize. I grow technical and "talk shop for a little.

Scientists measure food values by the heat unit or calorie, of which one-half pint milk contains about 140, one egg 80 and one-fourth pound tenderloin steak about 300. It has also been determined by experiment how many units per day the human system requires to maintain health under differing conditions. A man of average weight, if at rest, needs 2000 calories per day; with moderate labor 2500, and with hard labor 3000 to 4000.

All this is helpful, but certain other facts are needed to estimate the real value of a given diet. Generally speaking, foods contain three ingredents as the source of ther caloric value—proteids, fats and carbohydients. While the proportion dffers largely in different foods, the meat foods are usually taken as representing the proteids, and starchy the carbohydrates. As a rule it is the digestion of proteids that gives most trouble to the consumer—and incidentally the most business for the doctor.

It has long been a cherished belief among both laymen and physicians that the so-called red meats were bad for rheumatism because they "made uric acid in the system." The relation of uric acid to rheumatism has been denied by some recent writers, and may be regarded as unsettled. (Some peoplt you know, insist upon amending the decalog to suit their notions.) But the fact does rtmain that the digestion of proteids is accompanied by the production in the system of what are termed "purin bodies," of which uric acid may be taken as a type.

Now, whether or not these purin bodies produce rheumatism, is not essential for our purpose today. If they don't do that, they do other things enough in disturbing the internal economy to put them in the class of undesirable citizens. Furthermore, while they exist more or less in most proteids, they are much more abundant in the proteids of the red meats than in those of poultry, fish, eggs and milk.

Now, if you will regard the above as a sermon, this is the application: It would make for health with the average person if a large part of the beef and pork consumed was replaced by some of the other meat foods, particularly poultry and fish, to which may be added eggs and milk. With these one can get an ample supply of proteids and get them in a form to be more easily and fully digested with a much smaller amount of the objectionable purin bodies as a by-product.

While this applies in a general way to all healthy persons in whatever employment ,it applies with added force to such as are less active or sedentary in habits, and in whom the digestive processes and metabolism are slower and less complete.

Another important thought in this connection is this: It is well known that in cases of chronic kidney trouble the doctor's first advice is to cut out meat foods. This is because the elimination of waste material from proteid foods falls largely upon the kidneys, and when overworked, like any other organ, they "give out." Many lives would be saved for years of usefulness if people would provide against this condition of kidney failure by cutting down the meat supply, or by substituting in part the more easily digested kinds—poultry, eggs and fish.

Speak Of Them in The Highest Terms

WHY MR. AND MRS. WEST RECOMMEND DODD'S KIDNEY PILLS

They Cured Mr. West's Lumbago and Made Mrs. West Feel Like a New Person. They Are the Best Tonic.

St. James, Man., April 7th, (Special) —That Dodd's Kidney Pills are living up to their great reputation in the West is twice proved by Mr. and Mrs. G. West, well known and highly respected residents of this place. Let Mrs. West tell the story of what the great Canadian kidney remedy has done for her husband and herself.

"My husband suffered from attacks of lumbago," she states, " and the doctor did him no good, but I can truthfully say that since using Dodd's Kidney Pills he is entirely free from lumbago.

"I myself took six boxes of Dodd's Kidney Pills and am just like a new person. I have gained 10 lbs. since using them and my friends compliment me on how well I look.

"I have recommended Dodd's Kidney Pills to some of my lady friiends who were complaining of not feeling well, and they, like myself, speak highly of them."

Dodd's Kidney Pills cure the kidneys. Cured kidneys make pure blood. That is why Dodd's Kidney Pills are the best tonic.

THE PROPER USE OF KITCHEN TOWELS

There is some excuse, and a pretty good excuse for not drying dshes at all, but there is no excuse for drying them on soiled dish towels. Sometimes women who are extremely fastidious about their preparatoin of food and who would not for the world use their fingers in handling food, make a practice of drying dishes on towels that are not perfectly fresh

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained secoudnaud.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boou of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatmeut to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of somethiug evil about to happen, creepiug feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home. without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

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To Mothers of Daughters, I will explain a simple home treatmeut which speedily and effectually dispels green-sickness (chlorosis). irregularities, headaches and lassitude in youug women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten day- trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

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Pathé

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The Pathe groove in which the minute sound waves are recorded is from two to four times as large as in any other record. This big groove enables Pathe' to get 40% more tone colors and detail. Compare these records with other makes in the same class. Study the detail, the tone quality, the true naturalness of the voice, the orchestral accompaniment, always in perfect sympathy, yet note how voice and instrument each stand out clear and distinct right through to the end. The satisfying completeness of a Pathe' vocal record leaves nothing to be desired.

The Pathe' repertoire includes records by the foremost artists of the world, and will prove a revelation to the critical lover of the exceptional in music.

While to hear Pathe' records at their best, they should be played on the Pathephone, yet if you already have a machine of another make, any Pathe' agent can equip it to play Pathe' records—or, better still—will make you a liberal allowance for your machine in part payment of a Pathephone, which plays any record.

The Pathephone

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They have been used for the previous meal and have since then been about the kitchen, been used possibly to lift up a hot dish and maybe to sop up a little overturned water on the dining room table. And, after all, we use them to dry dishes. It is an interesting case of straining at a gnat and swallowing a camel.

Here are some directions you ought to follow if you would put yourself out of the class of dishcloth misusers:

Wash dish towels whenever soiled with hot water and soap and rinse them thoroughly. This means after every meat at which they have been ued. Two towels is enough to dry dishes for a very small family. If you have ix towels in use then you will have to wash them but once a day Have a special place to keep them when they have become soiled. If you have an ample supply you need not wash them at all, but may send them to the laundry with the other clothes.

When you hang towels to dry fold them lengthwise, with the ends pulled evenly together. They dry just as quickly in this way and it obviates the necessity of having to iron them, and makes them take up less room on the drying bars.

When the cloths have become stained and yellow wash them in ammonia and water.

Never use dishcloths for stove cloths. Have special heavy cloths for that purpose. Do not use soiled dish towels for the purpose of sopping up liquids that spill in preparation of food. Have a moist dishcloth always at hand for this purpose to keep the work table free from soil.

Rye Muffins

1½ c. rye flour, ½ tsp. salt, 1 c. milk, 4 tsp. B. P., 1 egg, ½ c. wheat flour, 1 tbsp. butter, melted.

Mix and sift dry ingredients, add beaten egg and milk and lastly melted butter.

Nut Stuffed Potatoes.

6 potatoes, 1 tbsp. butter, ½ c. ground nuts, salt, 2 tbsp. cream, pepper.

Bake potatoes, when done scoop out inside, being careful not to break skin much, mash potatoes, add nuts, cream and seasonings. Beat with fork until light. Refill skins and brown in oven.

Bran Gems.

1 c. bran, 1 c. milk, 1 tsp. salt, 4 tsp. B. P., ¼ c. sugar, 1 c. white flour, 1 egg, 1 tbsp. shortening, melted.

Mix and sift dry ingredients, add sugar, milk and well beaten egg and melted shortening. Bake in muffin tins.

Oriental Salad

Put dates through food chopper, add a pinch of ground cloves and shape mixture into small balls. Roll in grated cheese until thickly coated. Serve on shredded lettuce and mash with salad dressing.

Boiled Salad Dressing

½ tsp. salt, 1 tsp. mustard, cayenne, 1 tbsp. sugar, 1 egg or yolks of two, 1 tbsp. butter, ½ c. hot water, ¼ c. vinegar, 1½ tbsp. flour.

Mix dry ingredients, add egg slightly beaten, water, and vinegar. Cook until mixture thickens, add butter. This may be thinned with cream.

Make-the-most-of-it-Biscuit.

2 c. flour, ½ tsp. salt, ½ tsp. soda, 2 tbsp. shortening, 1 c. sour milk.

Mix and sift dry ingredients, work in butter, add sour milk, stir very lightly, making a soft dough. Bake in muffin tins 20 min. in hot oven. about 20 min. in quick oven.

Sallies

1 c. molasses, 1 c. shortening, 2 tsp. soda, 1 c. sugar, 1 c. buttermilk, flour, spices.

Cream butter and sugar and molasses, mixed and sifted dry ingredients alternately with milk. Mix as soft as can be handled. Roll out about ½ in. thick and cut with round cutter.

EATON'S
SPRING AND SUMMER CATALOGUE
1918

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REAL IRISH STEW

First peel and boil six large, or 12 small onions, for a quarter of an hour, and throw away the water; then boil three pounds of peeled potatoes for a quarter of an hour, and throw away the water also. While the potatoes are doing, cut a breast of mutton into thick slices, and your onions into thin slices, and cut your potatoes into thick slices when done. Put into a sauce-pan, first, a layer of onions, next a layer of potatoes, then a layer of meat, and afterwards a little salt and pepper; then again another layer of onions, a layer of potatoes, then a layer of meat, with salt and pepper, and so on, till all is in the stew pan. Put in three quarters of a pint of cold water, cover it quite close, and let it simmer very slowly, for three hours. In order to make this stew in perfection, you must do it over a very gentle fire, in a sweet earthenware pan, closely covered, to keep in steam. Or it may be baked, closely covered, in a slack oven for the same time. Serve it all up in one dish.

HONEY A SUGAR SUBSTITUTE

Honey is much more easily digested than sugar and much more quickly assimilated. It has the peculiarity of retaining moisture, keeping bread and cakes, for instance, fresh and soft for a long time. It is delicious on dry cereals of all kinds, even dry bran. In combination with most fresh fruits and nuts, there is no sweet like honey. Try it with baked apples, baked peaches, sour cherries, boiled or baked quinces, grape-fruit, cocoanut, almonds and Brazil nuts, and you will surely want it a second time. Raisins, spices and spicy seeds blend well with honey.

Honey cakes, as we have said, are noted for their keeping qualities. For this reason, the use of honey is recommended for wedding or black fruit cake, while it gives a richness to flavor and texture to even a plain raisin loaf.

Remember, anything sweetened with honey burns quicker than if sugar is used.

TO SHRINK WOOLENS

To shrink woolens wet a sheet and spread it over the table. Place one thickness of the goods lengthwise of the sheet, and roll sheet and material together. In the morning unroll and press the goods with a hot iron.

The teeth should be brushed at the morning toilet, after each meal, and again carfully at night, just before retiring, because of the presence of decomposing matter which has a longer time during the hours of sleep in which to set up a process of decay.

I have heard men in family prayer confess their wickedness, and pray that God would forgive them the sins that they got from Adam; but I do not know that I ever heard a father in family prayer confess that he had a bad temper. I never heard a mother confess in family prayer that she was irritable and snappish. The angels would not know what to do with a prayer that began: "Lord, Thou knowest that I am a scold."—Sermon: "Peaceableness."—Henry Ward Beecher.

Pain in Shoulders
PAIN IN HEAD
LIVER BOTHERED HER.

Miss A. Windsor, Peterboro, Ont., writes:—"I have been sick for about four years with pains in my head and pains in my shoulders which I always thought were caused by working outside in the sun on the farm.

People told me that it was my liver bothering me, so I bought three vials of Milburn's Laxa-Liver Pills, and found that they were doing me good. I continued taking them until now I am well and strong. I am very thankful to you for my recovery."

Milburn's Laxa-Liver Pills are a specific for all troubles arising from a morbid state of the liver, so keep it active by the use of these easy-acting, non-irritating little pills.

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with your success? If you are you are on the down grade. Deterioration starts as soon as we are satisfied. You must ever seek a greater business, more income, and extended influence, better health, an increased power to sway the minds of others. We can help you.

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To whom it may concern: This is to certify that I have used MINARD'S LINIMENT myself as well as prescribed it in my practice where a liniment was required and have never failed to get the desired effect.

C. A. KING., M. D.

SPRING.

Spring is Hope—and Hope is God!
Without it nothing lives or breathes;
It speaks—behold the daisied sod;
The tree is glad, the water seethes;
The crows go winding northward, ho!
The cranes across the marshes swing;
The bullfrogs croak where sedges grow,
And then I know that it is Spring.

Robert Kirkland Kernighan.

SUPPER MENUS.

Oatmeal Muffins Rye Muffins
Luncheon Dish Potato Scones
Crumb Cake. Tea. Cake. Tea.
Nut stuffed Potatoes. Oriental Salad
Bran Gems
Make-the-most-of-it-biscuit
Cake. Cocoa. Barley Drop Cakes Cocoa
Japanese Salad.
Crumb Muffins.
Cake. Cocoa.

THE BAD HABIT OF FATIGUE.

Oftentimes one can look back and discover what, in the first place, was the real cause of the fatigue which has settled down upon one and become chronic.

Now, there is such a thing as the fatigue habit, just as there are other bad habits—the habits of losing one's temper, of fault-finding, of taking the easiest way, of being curious, et cetera.

If one is sure that fatigue is not due to genuine physical causes—a digestive system that is not working well and taking thorough care of the body waste, or to overstrain from too much work or unfavorable surroundings—then it is well to have a day of reckoning, in order to decide whether the tiredness is the result of an acquired habit.

The acquisition of a bad habit is easy and swift. Once started you get to the bottom of its badness before you know you are there.

Now what do you suppose has most to do with making the descent so swift? It is that great power behind the throne of habit, an IDEA. And what do you suppose an idea is? Well, it is an act making up its mind to be born.

It Starts as an Idea.

Then it is rather important, is it not, to have the right sort of thoughts? All the more so, since, frequently, these ideas do not seem to be particular about asking leave to be born.

There is a vast deal of force in that little thought that pops into one's head, often uninvited, from goodness knows where.

It's power is almost endless, but there is one way of using it of which we seldom think; turning it in upon ourselves, reversing our ideas, telling ourselves that we are not tired, not silly, not weak-kneed.

We hear much about housecleaning, street-cleaning, civic cleaning, but what about a housecleaning time for ideas, thoughts and habits—in short, mental hygiene and sanitation, cataloguing and filing and stock-taking—which will end in the summary ejection of unclean or vicious thoughts, silliness, false ideals or useless and bad habits?

The moments of half-sleeping and waking at night-time and in the morning are the most important in all the twenty-four hours. They are fallow field for whatever crops you will sow and raise, whether of joy or depression, courage or cowardice, wisdom or folly, vigor or fatigue.

You went to bed that first night afraid that you were too tired to sleep. You repeated the fear a second night and followed it at intervals by a fifth, sixth, seventh, eighth time. The cowardice or folly is established.

On that first night the bad HABIT was begun. The mistake repeated, the bad habit became more firmly rooted.

Gradually the fear that you could not sleep, the idea that you were too tired, ceased to be an exception and

Little Miss MAIDEN CANADA

Hand It Out To Them as They Pass——

Or better, send them half a dozen bars of this nourishing chocolate. There is many a brave fellow hungry today in the trenches, who will appreciate this highly concentrated food more than anything else. Positively the finest eating chocolate made, 5c. and 25c. sizes.

COWAN'S ACTIVE SERVICE CHOCOLATE

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PEERLESS LONG SPAN GATES

THE gate pictured below is a companion to the Peerless Perfection farm fencing, strong, durable, with heavy tubular brace, which stiffens it like a steel bridge. It swings true and rigid as an oak door hung by a master mechanic. Lateral and upright wires securely clasped at all intersections and stretched upon a strong rigid frame of tubular steel electrically welded into one solid piece.

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In appearance a Peerless Gate says: **"I am guardian here."** For durability it is of heavy open hearth steel wire, galvanized and **can't rust** at any point. For service it is put together to last a **lifetime** and is the cheapest, **best gate** made. You will be interested in our **Catalog.**

Write Today for Literature

describing all our many styles of Gates, all kinds of Farm and Poultry Fencing, etc. Dealers nearly everywhere. It will pay you well to get acquainted with Peerless Perfection standard of construction. Write today.

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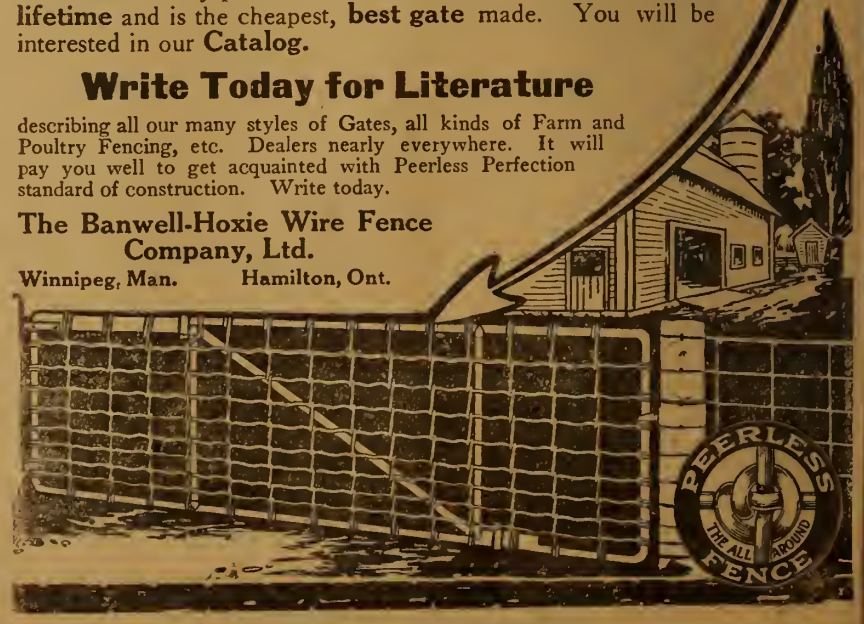


became the rule.

To an astounding extent are we what our thoughts make us. You might sleep forever, but if you slept with the idea of being fatigued, with mathematical certainty would you wake fatigued and not refreshed. Now, without any effort on your part this little tragic-comedy of one act, two acts, three acts,—miserable wakefulness, complaining, exhaustion—r epeats itself, takes place spontaneously every night and becomes a habit.

By this time, too, habit has scrawled not only a line upon your brain, but also lines upon your face. It finds expression in dropping shoulders, listless walk and general weakness of the will. From having been attractive, your faec has ceased to be interesting or winsome any longer, your very personality has lost charm and magnetism for others. What is worse, the fatigue, which was part imagination and part fear, has become genuine enough and you are really tired.

In the words of the comic opera "Here's a pretty howdy-do" for any self-respecting girl or woman. If she is to get back her lost self-control and attractiveness, conditions must be wholly reversed.

Ideas of rest, vigor and cheerfulness must be affirmed and maintained. Gradually, because the best in us is long-suffering and almost ineradicable, the vitality which remains answers the summons and the process of driving out the enemy-chronic and imaginary fatigue—begins. tI cannot begin too soon.

Obstacles will present themselves to the recovery of buoyancy. Down with these. The will has grown weak in the hothouse of long-continued weariness, and trifles will magnify themselves, some of the difficulties seeming insurmountable.

Grapple with them. Don't hesitate. Toss them out head over heels.

Only You can Overcome it.

Remember, it was partly your imagination that brought upon you the miserable habit of tiredness and made you in the end really ill. Its power must now be reversed until it has restored vigor and health and brought happiness with it.

Simply to assure yourself that you are not tired is one of the best first steps to take.

You want to be vigorous, fresh, dynamic. It will mean love, friends, happiness, success, health—it will mean everything for you to be so. Very well, then, walk and move as if you were vigorous, speak as if you were, act as if you were. Forget the devitalizing habit that has possession of you. Never discuss it with anyone. Never speak of it again. If it pops into your mind. throw it out promptly. One's body, made up, among other things, of bundles of nerves and muscles obedient to these nerves, is not stupid. This surprising message of freshness and vigor, this new attitude, will be quickly carried to all the nerve "centrals" throughout the body and repeated and repeated and repeated, until what was "news" at first becomes daily fact. And under the wholesome message, the body straightened up, physical functions get back their strength, lines vanish from the face, and one's organism strives for and achieves new levels of will-power, self-control ,health and joy in life.

Barley Drop Cakes

¼ c. shortening, ½ c. molasses, ½ c. sour milk, 1 c. barley flour, ½ tsp. salt, ½ tsp. cinnamon, ¼ c. sugar, 1 egg, 1 cup wheat flour, 1 tsp. soda, 1 tsp. ginger.

Cream butter and sugar, add beaten egg, molasses and milk, mixed and sifted dry ingredients. Drop on buttered sheet. Bake in quick oven.

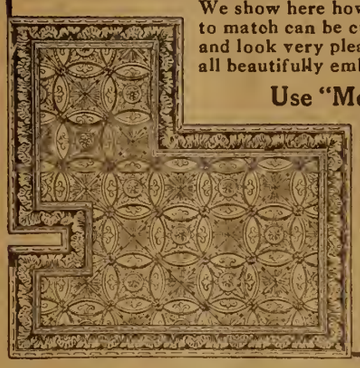
Japanese Salad.

2 c. boiled rice, ½ c. nuts, 1 green pepper, ½ c. celery, 1 tart apple, 1 small onion.

Chop apple, nuts, pepper and onion, mix with rice and salad dressing.

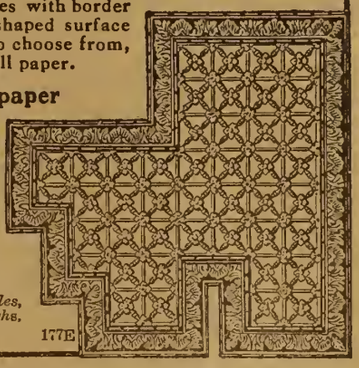
"Metallic" is beautiful for walls and ceilings

Any shaped wall or ceiling can be tastefully covered



We show here how two of our most artistic and popular plates with border to match can be cut and notched if necessary to suit an odd shaped surface and look very pleasing. We have dozens of modern designs to choose from, all beautifully embossed and actually easier to put on than wall paper.

Use "Metallic" instead of lath, plaster and paper



"Metallic" steel plates never sag or crack or get torn off, they can be painted or washed, and they are fire proof, sanitary, economical and once put up are there to stay. Have you any old or broken plaster ceilings, or are you putting up a new home? Let us send you our illustrated folders on "Metallic" the handsomest and most durable of all wall and ceiling coverings. You'll have a splendid choice.

The METALLIC ROOFING CO. Limited

Manufacturers, King and Dufferin Streets, Toronto

Catalogue, if interested, on "Eastlake" steel shingles, "Empire" corrugated iron, ventilators, hog troughs, "Metallic" rock and brick face siding, etc.

177E

Crumb Muffins

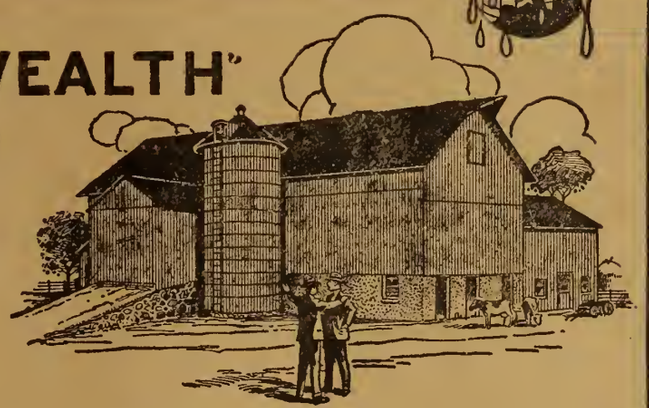
1½ c. crumbs, 1¼ c. milk, ½ c. flour, ½ tbsp. melted butter, 1½ tsp. B. P., ½ tsp. salt, 1 large egg.

Pour milk on crumbs first, stand until soft then beat with egg beater, add beaten yolks, flour, salt, B. P. and melted butter, lastly fold in stiffly beaten whites. Bake in muffin tins

SHERWIN-WILLIAMS PAINTS & VARNISHES

M-S COVER THE EARTH

"COMMONWEALTH" BARN RED



The Paint for Barns, Roofs, Fences, Etc.

S-W COMMONWEALTH BARN RED is a bright, rich Red, that works easily, covers well and dries with a fine, smooth, durable finish. Put up in convenient sized cans, all full Imperial Measure. Why not try it this year to protect your barn against the weather ?

You have a heavy investment in farm machinery, implements, wagons, etc. Increase their life and usefulness by protecting them against rust and decay, by using *SHERWIN-WILLIAMS WAGON AND IMPLEMENT PAINT*. The longer they last the less they cost.

It is economy to use *S-W BUGGY PAINT* on your buggies and carriages, and *S-W AUTO ENAMEL* on your car. They give entire satisfaction and are easy to apply.

Color schemes and suggestions for any part of your building furnished by expert decorators, free upon application and without any obligation.

Send for our book:—"The A.B.C. of Home Painting" written by a practical painter, telling how to paint, varnish or enamel every surface in and around your home.

THE SHERWIN-WILLIAMS CO., OF CANADA, LIMITED,

897, Centre St., Montreal, Que. 110 Sutherland Ave., Winnipeg, Man.

PAINT, VARNISH AND COLOR MAKERS. *LINSEED OIL CRUSHERS.*

7

KINGS COUNTY SEED FAIR

The fifteenth annual Kings County Seed Fair under the auspices of the Sussex and Studholm Agricultural Society was held in the basement of the Agricultural School. Sussex, on Thursday, March 28th.

Despite the unfavorable crop conditions of last summer the seed grain exhibited at the Fair was well up to the standard of former years.

There was a big display of oats. Some samples of which were somewhat off color but otherwise very good in quality.

The bean display was the best ever made at a Sussex Seed Fair.

Wheat and buckwheat exhibits were of excellent quality.

The turnips for seed growing section was well filled. The potato sections were not quite as extenoively filled as they were last year.

Several young men were on hand with exhibits for the first time. The interest they evidenced in the proceedings is a good omen for future seed fairs, and means that some of the older exhibitors must look well to their laurels.

Dark horses won the race in the rough buckwheat and smooth buckwheat classes. These same exhibitors will likely come back with bigger and beter entries next year.

It takes quality goods to win at the Sussex Seed Fair.

See a full list of the prize winners.

C. F. Alward, Havelock and W. H. Moore, Scotch Lake, placed the awards in the absence of S. J. Moore, Maritime Representative of the Seed Division, who was called to Quebec last week on important business in connection with the procuring of seed grain to fill the demand that is so pressing in the Maritime Provinces.

A general meetin gof the Agricultural Society was held in the afternoon at 2.30 o'clock. J. T. Prescott occupied the chair. There was a good representation of the members present. Several subjects were discussed. The Seed Fair judge gave short addresses on the fair in general. R. P. Steeves spoke on the subject of Agricultural Education in our Schools. J. E. McAuley expressed himself on the good work done in his locality last fall by the Government. Clover Huller and urged upon all present to plan and prepare to take advantage of the use of this machine next fall by reserving some clover hay for seed. Mr. McAuley threshed 400 pounds of clover seed last fall and with clover seed selling from 30 to 50 cents per pound it will readily be seen that he was well repaid for his labors.

Owing to the urgency of the calls that are being sent out to our farmers by the Department of Agriculture on the representations of the Food Board is was unanimously decided that the Society members must meet on the last Saturday of each month at 2.30 p. m. to assist in passing the word olong and discuss the various problems that may be presented. The sum of $50.00 was voted to the Allies Relief Fund.

H. R. McMonagle acted as auctioneer and the first prize samples of seed grain were disposed of at good figures to the highest bidders.

The Seed Fair of 1918 was a success in every respect.

DEDICATE AND PREPARE FOR

Greater Food Production

Every One's Duty. Give One Week to Preparation for the Spring Crop Drive

PLAN EARLY! BE READY!

A SPECIAL Proclamation by His Honor the Lieutenant-Governor has been made to all County Councils to convene an extraordinary meeting to discuss ways to increase Food Production.

ALL CLERGYMEN to proclaim from their pulpits on April 14th the terrible truths of the 1918 food situation.

ALL CITIZENS to co-operate loyally in the sacred cause of producing more Food this year.

THE CRISIS IS WITH US—THE TIME OF SOWING IS AT HAND—THE RESPONSIBILITY UPON NEW BRUNSWICK IS GREAT.

SUGGESTIONS.

PLANS—

(1) Arrange definitely crop rotations.
(2) Secure seed early.
(3) Where possible arrange to co-operate with neighbors in the seeding season. Change work.
(4) Prepare to remain on farm every day after seeding commences until the seed is sown—Transact all necessary business now.

EQUIPMENT—

(1) Carefully overhaul all harness.
(2) Put all machines and implements into shape.
(3) Procure the most needed repairs—Secure a few extra.
(4) Have all tools, such as axes, saws, hammers and wrenches, ready and conveniently placed.

SEED—

(1) Reclean seed unless it is satisfactory.
(2) Treat oats for smut.
Add 1 pint Formalin to 36 gallons of water. One gallon of this mixture will treat about two bushels of grain.
(3) Treat potatoes for scab.
(4) Have seed prepared before Spring operations commence.

FERTILIZERS—

(1) Procure them early—The supply is very limited.
(2) Have you used more than necessary in past seasons? Plan to use more green manures.

CROPS—

(1) If your land is suitable for wheat sow a few acres; if not, arrange in order that some cereal will be grown.
(2) Food, not dollars, is the great essential—Use your land so that your country and also that you may feel the best possible use has been made of every acre.

CONSIDER WHAT MAY HAPPEN IF AMERICA FALLS SHORT IN CROP PRODUCTION IN 1918!

NEW BRUNSWICK IS EXPECTED TO DO ITS DUTY IN THIS HOUR OF CRISIS.

J. F. TWEEDDALE,
Minister of Agriculture of New Brunswick.

THE PRIZE WINNERS

Wheat, White or Red Fife—7 entries
1—W. H. Venning; 2—A. W. Raymond, Lower Millstream; 3—Bert Tamlyn, Sussex; 4—W. E. Wallace Penobsquis.

Wheat, any other variety—6 entries
1—W. A. Venning; 2—Bert Tamlyn 3—T. A. Davis, Sussex; 4—H. B. Pa

Who chose the Friction Pulley on your Engine?

90% of the Friction Pulleys sold with Gas Engines are not manufactured by the makers of the engine. When you buy an Engine equipped with Friction Pulley you have your choice of Engine, but someone else choice of Pulley When buying make certain of satisfaction—choose the pulley yourself—specify, or order direct. Bernard's Double Friction Pulley.

THE A. BERNARD INDUSTRIAL COMPANY
Manufacturers, Etc.,
Office and Works, Fortierville, Que.

FARMERS AND BREEDERS

Who wish to keep their horses and cattle strong and healthy, should always have on hand a supply of

OMAZON

The Canadian medicinal stock food for Horses, Cattle, Sheep, Hogs and Poultry.

It will help to economize on feed and owing to its sovereign tonic and curative virtues will keep the stock strong, healthy and free from many ailments.

Order from your dealer. If he hasn't it in hand, he will be pleased to obtain it for you.

DR. ED. MORIN & CO., Limited, Quebec, Can.

lee, Sussex.

Barley, Two or Six Rowed—4 entries

1—Bert Tamlyn; 2—W. H. Venning; 3—H. B. Parlee; 4—W. J. King, Sussex.

Oats, White, any variety named—14 entries

1—H. B. Parlee; 2, 3, 5 and 8—W. H. Venning; 4 and 6—Bert Tamlyn; 7—R. E. Hoyt, Bloomfield Station.

Buckwheat, Rough—7 entries

1—Alex Cook, Carsonville; 2—Bert Tamlyn; 3—J. F. Roach; 4—W. H. VeVnning.

Buckwheat, Smooth—4 entries

1—R. E. Floyd; 2—H. B. Parlee; 3—W. H. Venning; 4—T. G. Perry.

Peas, Field, any variety—1 entry

1—McIntyre Bros., Sussex.

Peas, Garden—2 entries

1—R. E. Floyd; 2—T. G. Perry, Lower Ridge, Aavelock.

Beans, Colored—10 entries

1 and 2—N. W. Eveleigh; 3 R. E. McAuley.

Corn, Yellow field, any variety—1 entry

1—T. G. Perry.

Corn, Sweet—1 entry

1—H. B. Parlee.

Grass Seed—1 entry

1—McIntyre Bros.

Potatoes, Green Mountain—3 entries

1—H. B. Parlee; 2—W. E. Wallace; 3—McIntyre Bros.

ed—2 entries

1—H. Yeomans; 2—H. B. Parlee.

Potatoes, any Rose variety named—3 entries

1—McIntyre Bros.; 2—T. J. Davis, Sussex; 3—T. A. Davis.

Potatoes, any White round or short variety named—3 entries

1—McIntyre Bros.; 2—T. A. Davis; 3—T. J. Davis.

Potatoes, any Red variety named—2 entries

1.—H. B. Parlee; 2 H. R. McMonagle, Sussex Corner.

Potatoes, any Dark Skinned variety—1 entry

1—H. B. Parlee.

Six Turnip or Swedes for Seed Growing Purposes—7 entries

1—McIntyre Bros.; 2—R. E. McAuley, Sussex; 3 H. R. McMonagle; 4—R. E. Floyd.

Turnip or Swede Seed—3 entries

1 and 2—W. H. Venning; 3 McIntyre Bros.

Best Collection Vegetable Seeds—1 entry

4—R. E. Floyd.

Oats from Standing Crops Competition 1917—6 entries

1—H. B. Parlee; 2—W. H. Venning; 3—W. E. Wallace, Penobsquis; 4—Irvine Mosher, Sussex.

Wheat from Standing Crops Competition 1917—3 entries

1—W. E. Wallace; 2—W. H. Venning; 3— W. J. .King, Sussex.

Buckwheat from Standing Crops Competition 1917—4 entries

1—H. B. Parlee; 2 W. H. Venning; 3—R. E. Floyd; 4—Irvine Mosher.

NEW BRUNSWICK PROVINCIAL SEED FAIR

Sec. 1—Wheat, White Fife—1, Donald Innis, Tobique River; 2, Leslie Sharp, Mouth Keswick; 3, W. H. Venning, Sussex; 4, E. Lorne Hume, Florenceville.

Sec. 2—Wheat, White Russian—1, Geo. E. Fisher, Chatham; 2, Hypolite T. Daigle, St. Charles; 3, Henry Duplissea, Mouth Keswick; 4, Edward M. Jarvis, Stanley.

Sec. 3—Wheat, Red Fife—1, J. W. Stevenson, Gladstone; 2, Henry Gordon, Chatham; 3, W. H. Venning; 4, John A. Johnston, Chatham; 5, W. E. Palmer, Mouth Keswick.

Sec. 4—Wheat, Any other variety named—1, W. H. Venning; 2, Geo. E. Fisher; 3, H. B. Parlee, Sussex; 4, W. B. Tamlyn, Sussex, R. R. No. 2; 5, J. W. Stevenson; 6, W. M. Johnson, Newcastle; 7, W. H. Moore, Scotch Lake.

Sec. 5—Wheat Sweepstakes—1, Edward M. Jarvis; 2, Geo. E. Fisher.

Sec. 6—Oats, Banner—1, J. W. Stevenson; 2, Henry Gordon; 3, R. J. Shaw, New Maryland; 4, H. B. Parlee; 5, E. M. J. Jarvis; 6, J. A. Johnson; 7, Harvey Duplisea; 8, J. Walter Inch, Burtts Corner; 9, W. H. Venning.

Sec. 7—Oats, Ligowa—1, E. Lorne Hume.

Sec. 8—Oats, Regenerated Abundance—1, R. J. Shaw; 2, W. H. Venning; 3, Henry Gordon; 4, Donald Innis; 5, J. A. Johnston.

Sec. 9—Oats, Any other White Variety—1, J. W. Stevenson; 2, W. B. Tamlyn; 3, R. J. Shaw; 4, Henry Gordon; 5, Donald Innis; 6, W. M. Johnston.

Sec. 10—Oats, Black, any variety—1, E. M. J. Jarvis; 2, Jas. D. Daigle, Bretaigneville.

Sec. 11—Oats, Sweepstakes—1, H. B. Parlee; 2, Henry Gordon.

Sec. 12—Barley, 2 rowed—1, J. W. Stevenson.

Sec. 13—Barley, 6 rowed—1, W. H. Venning; 2, J. W. Stevenson; 3, R. J. Shaw; 4, Geo. E. Fisher; 5, D. A. H. Margison, East Centreville.

Sec. 14—Buckwheat, Smooth—1, H. B. Parlee; 2, W. H. Venning; 3, J. A. Johnston.

Sec. 15—Buckwheat, rough—1, Harvey Duplisea; 2, F. E. Henderson, Andover; 3, Jas. D. Daigle; 4, H. B. Parlee; 5, J. W. Stevenson; 6, E. J. M. Jarvis.

Sec. 16—Potatoes, Green Mountains—1, Henry Gordon; 2, P. S. Bremner & Son, Chatham; 3, W. H. Moore; 4, H. B. Parlee; 5, S. Manzer, Millville; 6, F. E. Henderson; 7, W. M. Johnston; 8, E. M. J. Jarvis.

Sec. 17—Potatoes, Irish Cobblers—1, W. E. Palmer; 2, F. E. Henderson; 3, Henry Gordon; 4, Jas. A. Johnston; 5, H. B. Parlee; 6, Ludlow T. Hoyt, Prince William; 7, J. Walter Inch; 8, Leslie Sharp.

Sec. 18—Potatoes, any long white variety—1, W. E. Palmer; 2, H. B. Parlee; 3, J. Walter Inch; 4, John Inch & Son; 5, E. M. J. Jarvis.

Sec. 19—Potatoes, any rose variety—1, E. M. J. Jarvis; 2, W. E. Palmer; 3, J. Walter Inch; 4, John Inch & Son, Burtts Corner; 5, Bertrand Goodspeed, Penniac.

Sec. 20—Potatoes, any red variety—1, Leslie Sharp; 2, H. B. Parlee; 3, Henry Gordon; 4, Bertrand Goodspeed; 5, J. Walter Inch.

Sec. 21—Potatoes, any dark skinned variety—1, Henry Gordon; 2, P. S. Bremner & Son; 3, H. B. Parlee; 4, Wm. E. Palmer; 5, Bertrand Goodspeed.

Sec. 22—Turnip Seed—1, Henry Gordon; 2, E. M. J. Jarvis; 3, Ludlow T. Hoyt; 4, R. J. Shaw; 5, John Inch & Son; 6, Geo. E. Fisher.

Sec. 23—Mangel Seed—1, Jas. A. Johnston; 2, Ludlow T. Hoyt.

Sec. 24—Carrot Seed—1, Ludlow T. Hoyt; 2, P. S. Bremner & Son; 3, Jas. A. Johnston; 4, J. W. Stevenson.

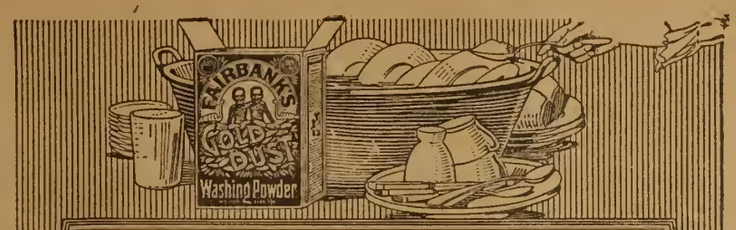
Sec. 25—Six turnips or Swedes for seed—1, E. Lorne Hume; 2, P. S. Bremner & Son; 3, Harvey Duplisea; 4, John Inch & Son; 5, Henry Gordon; 6, H. B. Parlee.

Sec. 26—Six Mangels for seed raising—1, Henry Gordon; 2, B. Goodspeed; 3, Donald Innis.

Sec. 27—Potato Onions—1, Henry Gordon; 2, Geo. E. Fisher; 3, Ludlow T. Hoyt; 4, J. K. Rosborough, Mouth Keswick.

Sec. 28—Six table onions for seed raising—1, Geo. E. Fisher; 2, Jas. A. Johnston; 3, E. Lorne Hume.

Sec. 29—Garden Peas—1, E. M. J. Jarvis; 2, R. J. Shaw; 3, Jas. A. Johnston; 4, Henry Gordon.



Is Gold Dust helping *you*?

IF YOU take dishwashing for granted, then take Gold Dust for granted, too.

Gold Dust doesn't turn dishwashing into a real joy, but it does dissolve grease pleasantly and much quicker than soap.

Dishes washed in water softened with Gold Dust, are spotlessly, brilliantly clean.

Another thing you can take for granted is that Gold Dust, when used for washing dishes, saves many precious minutes every day.

Doesn't this time-saving quality of Gold Dust appeal to you?

Gold Dust saves time, too, in many other ways. Keep the ice-box sweet and sanitary with it; the floors and woodwork cheerfully clean; the bathtub immaculate.

And be sure it really *is* Gold Dust that you use. Your grocer can sell you Gold Dust in large and small packages.

GOLD DUST

The Busy Cleaner

Made in Canada

Let the GOLD DUST TWINS do your work.

THE N.K. FAIRBANK COMPANY
LIMITED, MONTREAL

Sec. 31—Beet Seed—1, P. S. Bremner & Son; 2, R. J. Shaw.

Sec. 32—Parsnip Seed—1, P. S. Bremner & Son; 2, Henry Gordon.

Sec. 33—Sweet Corn, any variety—1, W. E. Palmer; 2, Harvey Duplissea; 3, Geo. E. Fisher.

Sec. 34—Sweepstakes, best collection—1, P. S. Bremner & Son; 2, Jas.

(Continued on page 400)

REGAL FLOUR

THE REGAL FLOUR — THE ST. LAWRENCE FLOUR MILLS COMPANY LIMITED

Best for Bread
Best for Cakes
Best for Pies
Best for all Household Baking

PRESIDENT BAIRD'S ADDRESS BEFORE THE N. B. F. & D. A.

(Continued from page 379)

back and watch the young man to see if he will respond to the call to arms. We have had our opinion and perhaps expressed it, in regard to the duty of the young man in the face of such a call. The young man is now watching us. Some of those who are maimed and scarred and crippled for life are watching us. The call for food and for money new is more urgent and pressing than the call for men was when they enlisted. This call for food is the question of the day. It is a smple imatter to give money—if we have the money and have the heart to give it. But producing more food is not a simple matter—it is a problem and it is a problem for us to solve. If the Farmer does not rise to the occasion, then the plans and the efforts of the Government will be unavailing. Our oppurtunity to sacrifice something has come. We are being "weighed in the balance." If we are to be worthy of the respect of those who have risked their lives for us and of the relatives of those who have died in the fight to preserve our freedom—we must do better. We can produce more—we ought to do it. That settles it—we shall. Does anyone say no?

But while it is a testing time, a time that calls for the opening of our hearts and our purses, I repeat that it is also a time of great opportunity. The dignity and importance of our calling is now recognized as of National value.. perhaps more than that of any other occupation in civil life. Our Government is leading off in many lines in an effort to asstist and co-operate with us in an endeavor to increase production and develop the agricultural resources of our land. I believe that they are hampered in their efforts because the farmers are not asking for more.

At a meeting called last spring in this city with a view to increased production it was very evident that the "Powers that be" wished to hear from the farmers themselves just what they wanted in order that the desired result might be obtained. The farmers were hardly prepared to say what they wanted.

A better opportunity is given during this session of the convention because a letter has been sent (I presume) to all Agricultural Societies suggesting that any matter of vital importance and general interest to that district can be brought before this Association by having a resolution placed in the hands of the resolution committee early in the session.

We ought not to forget, while we are here in session that the findings of this Association usually receive favorable conideration and it therefore becomes us, if we have any requests to make or suggestions to offer to the Department of Agriculutre or Legislature in general, to take advantage of this oportunity.

Perhaps I might make a suggestion in regard to the only other Provincial organization we have. I refer to the N. B. Agricultural Societies United. I think we may call it a child of this Association. So far as I know it is the only regular authorized purchasing agency for the Agricultural Societies. At present the Act of incorporation only covers, "Fertilizer ingredients." It has however, this clause, "and when authorized by order-in-Council of the Lieutenant-Governor-Council to undertake to carry on any other work or business which may be of advantage to the farming industry." I hope you may see fit to take some action on this matter as I believe that organization ought to be doing a lot more co-operative purchasing than it is at present. It has done good work for the Agricultural Societies that have taken advantage of the privileges it offered and has done more in the Society to which I belong to increase the membership and develop the spirit of co-operative purchasing than any of us would have believed possible before we tried it.

What about the past year? In regard to dairying, crops, prices, etc., I have no doubt the reports of the County Vice-Presidents will fully cover these subjects so that we may make only a few observations. I think on the whole we were somewhat disappointed at harvest time. Neither the grain or potatoes were as good as they promised to be earlier in the season, in many cases quite a serious failure. Why? Mainly unfavorable climatic conditions, but not altogether that. Most of us depend too much on Providence for a good crop. We leave too much for Providence to do. We forget that growing crops is a partnership business. That God is the great, silent, senior member of the firm. That He has established laws to be observed if success is to be expected. Some years we violatet those laws and yet have good crops. Judgment against an evil work is not always executed speedily. But this year He has taught us a lesson and I hope we have all learned it.

This is what I have learned. If I want to be reasonably sure of a good crop I must have my land drained—no use to plant potatoes where a lake will form after a big shower. I must have my land prepared in the fall so that the crop may take advantage of the best growing time which is early in the eason. I must plant good seed. I must culeivate, cultivate, cultivate and spay, spray, spray and Providence will do the rest. What about this year Can we get a vision here of a bumper crop next fall? I hope we can. I have great faith in the power of inspiration. We are asked to grow wheat enough to "bread" New Brunswick. Shall we do it? We are asked to give up "Business as usual" and

The Country Store

IN the evening, when the day's work is done, men like to stroll over to the village store to discuss the war, politics, or whatever may be of local interest.

It is under these circumstances that the health of the family is referred to and experiences are interchanged in regard to medicines that have proven particularly effective.

After Dr. Chase had introduced his medicines to the druggists he found that many who wrote to him for treatment lived many miles from doctor or druggist, and had to depend on the country store for their medicines. Thus it came about that Dr. Chase's medicines were placed in general stores, and you can now obtain them wherever medicines are sold.

Instead of trying to imagine what the man in the picture is saying about Dr. Chase's Kidney-Liver Pills, we shall publish a letter from Mr. James Carr, who attributes his good health and that of his large family to the use of Dr. Chase's Kidney-Liver Pills.

18 Miles From Drug Store.

Mr. James Carr, Maynooth, Ont., writes: "About nineteen years ago I received an envelope containing two of Dr. Chase's Kidney-Liver Pills. I was doctoring at the time with two doctors and, as they did me no good, I used the pills, and by the time I had finished one box I was cured of the pain in the back and shoulders.

"We have great confidence in Dr. Chase's medicines. I have a family of ten children and have never had a doctor in the house for any of them. We live eighteen miles from a drug store, and find that these pills cure nearly all the ordinary ills by regulating the liver, kidneys and bowels. That we are all well and sound I attribute to their use, and I have recommended them to hundreds and given away many a box because I believe there is no medicine so good."

After long experience with Dr. Chase's Medicines we have found that people who try them are soon convinced of their exceptional merits.

We have published thousands of letters to give you an idea of the benefits others have obtained by their use, but if you are still skeptical we shall be glad to send you our

Free Combination Package

One 25-cent box Dr. Chase's Kidney-Liver Pills.
One sample box Dr. Chase's Ointment.
One copy Dr. Chase's Recipes.

You will kindly mention the name of this paper and enclose a 2-cent stamp to pay postage to Edmanson, Bates & Co., Ltd., Dr. Chase Bldg., Toronto. 4

concentrate our efforts on the things that are necessary to life and necessary for the success of our armies. Shall we do it? Let us resolve that with the help of God and of our Government we shall grow such a crop this year as New Brunswick has never seen before.

The words of the old chorus "Victory depends on you" sums up pretty well the message that is being addressed to the farmer. It comes from a source that we can hardly doubt its sincerity. It ought to put us on our mettle to do our best.

But I must not take up more of your time. Just a word in closing about the experimental farm. We are to visit it on Thursday afternoon. I believe Mr. Hubbard would have undertaken to feed us there again, even after his experience with us on Labor Day, but in planning for the trip our Executive ruled that we had better have all the time free to see and hear what is benig done there. I regard the Farm and the experiments carried on their for our benefit as one of the best things the Dominion Government has done for this Province. That, along with the rapidly increasing work of our own Department of Agriculture, puts us in a position for progress that justifies us in having bright hopes for the future.

What about these meetings? Many of you are asking. Will we get any practical good out of them? Will we learn anything? Let me tell you something. The best authority on teaching that I know of has said this: "Teaching includes the mutual efforts of two persons to the same ned, the teacher must endeavor to cause the pupil to learn a particular fact or truth which he wants him to know, the learner must endeavor to learn that particular fact or truth." The Executive of this Association, assisted by the Department of Agriculture, have endeavored to get the best possible "Teachers" experts in their lines, for these meetings, and if ou don't forget that "The learner must endeavor to lear" you'll learn something.

ISAAC W. BAIRD.
Chipman, N. B.

The Census and Statistics Office has published readily its annual estimates of farm values in 1917 as compiled from the reports of correspondents at the end of January, 1918. The estimates comprise (1) the average values of farm land (2) the average wages paid for farm help and (3) the average values of farm live stock and of wool.

Average Values of Farm Land

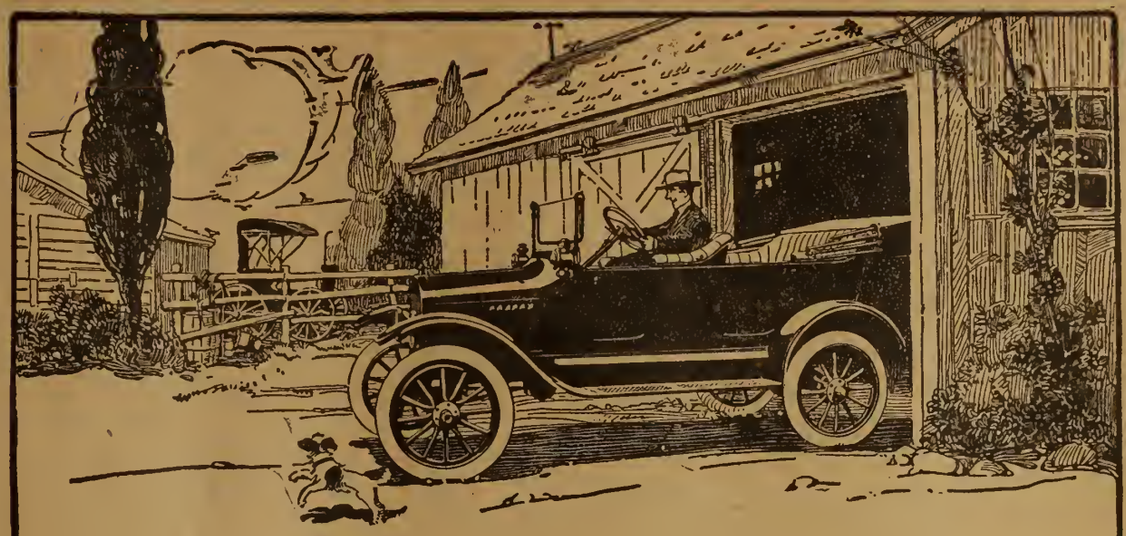
According to the returns received, the average value of farm land for the whole of Canada, including land improved and unimproved, together with dwelling houses, barns, stables and other farm buildings, is approximately $44 per acre as compared with $41 in 1916. The average values by provinces are as follows: Prince Edward Island, $43 7; Nova Scotia, $33.6; New Brunswick, $28.8; Quebec, $53; Ontario, $55.3; Manitoba, $31; Saskatchewan, $26; Alberta, $26.7; British Columbia, $149. In the last named province the higher wages is due to orcharding and fruit growing.

Average Wages of Farm Help

The average wages paid for farm help during the year 1917 have increased substantially since 1916 and have again reached the highest level on record. In many cases they are double what they were before the war. For the whole of Canada the wages per month of farm help during the summer, including board, average $63.63 for male and $34.31 for female help, as compared with $43.23 and $22.46 in 1916. For the year 1917, including board, the wages averaged $610.60 for males and $364 for females as compared with $397 and $228 in 1916. The average value of board per month is returned as $19.44 for males and $14.79 for females as compared with $17 for males and $13 for females in 1916. By provinces, the average wages per month for males and females respectively, in the summer season, including board, were as follows: Prince Edward Island, $39.74 and $22.63; Nova Scotia, $53.75 and $26.43; New Brunswick, $57.19 and $28.14; Quebec, $59.09 and $28.98; Ontario $59 and $31.96; Manitoba, $67.97 and $40.28; Saskatchewan, $73.21 and $41.09; Alberta, $76.09 and $44.44; British Columbia, $78.12 and $48.30,

Average Values of Farm Live Stock and of Wool.

On the whole there is but little change reported in the value per head of horses; in some of the provinces the value has remained stationary or has even declined. For cattle, sheep and swine, however, values are substantially higher than last year and are higher than in any previous year for which records have been collected. For Canada, the average value of horses, three years old and over is $167 as compared with $160 in 1916, milch cows are $84 as against $70; cattle between one year old and three years average $52 against $43; sheep are $14.93 against $10.48 last year and swine are $17.33 against $11.98 per cwt. The average value of wool is 59 cents per lb. unwashed and 75 cents per lb. washed. Correspondents were requested to ascertain as nearly as possible the average value per head of each description of farm animal, and for calculation of total values these averages have been applied to the total number of farm animals as returned in June last. The results are as follows: Horses $429,123,000 as compared with $418,686,000 in 1916; milch cows, $274,081,000 as against $198,896,000, other cattle $270,595,000 as against $204,477,000, sheep $35,576,000 as against $20,927,000 and swine $92,886,000 as against $60,700,000. The total value of farm live stock in Canada is estimated to be $1,102,261,000, as compared with $903,686,000, the estimate for 1916 as finally revised by the Census returns for the Prairie Provinces. In 1917, for the first time, the total value of farm live stock exceeds one billion dollars.



Replace Your Buggy With a Ford

MORE than 100,000 Fords are owned by people in Canada in preference to the old horse-drawn buggy and other makes of cars.

Your neighbors, and farmers in every section of the Dominion are abandoning their old buggies—selling their driving horses and buying Fords.

Ford cars are utility cars. They are built to endure the strain of constant daily use over rough roads.

These are the tests every farmer gives his car. The Ford meets them in a satisfactory manner. It is the farmer's car, so why not replace *your* horse and buggy with a Ford?

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THE UNIVERSAL CAR

F. O. B. FORD, ONT.

RUNABOUT	$575
TOURING	$595
COUPE	$770
SEDAN	$970
CHASSIS	$535
ONE-TON TRUCK	$750

Ford Motor Company of Canada, Limited

Ford, Ontario

FIRST AID IN THE KITCHEN +

Mends Leaks in Graniteware, Tin, Aluminum, etc., in two minutes without tools. Saves a kettle for half a cent. At dealers or from us, 15 cents.

Vol-Peek Co., Box 2024, Montreal, Can.

VOL-PEEK

NEW BRUNSWICK PROVINCIAL SEED FAIR

(Continued from page 397)

A. Johnston; 3, W. H. Moore, Mouth Keswick, Route 1.

Sec. 35—Timothy Seed—1, J. W. Stevenson; 2, Jas. A. Johnston; 3, R. J. Shaw; 4, F. E. Henderson.

Sec. 39—Field Peas, large—1, Henry Gordon; 2, Dominique Robichaud, Bretagneville; 3, P. S. Bremner & Son; 4, E. J. M. Jarvis; 5, W. H. Moore; 6, Jas. A. Johnston.

Sec. 40—Beans, white—1, R. J. Shaw ; 2, E. J. M. Jarvis ; 3, Jos. D. Daigle; 4, Dominique Robichaud; 5, F. E. Henderson; 6, W. H. Moore.

Sec. 41—Beans, colored—1, John W. Moore, Mouth Keswick Route; 2, N. W. Eveleigh, Sussex; 3, W. H. Moore, 4, W. H. Venning; 5, Harvey Duplisea; 6, E. J. M. Jarvis.

Sec. 42—Beans, Yellow Eye—1, John K. Rosborough; 2, N. W. Eveleigh; 3, Dr. Sproul, Chatham; 4, F. E. Henderson; 5, P. S. Bremner & Son; 6, Henry Gordon.

Sec. 43—Corn, any flint variety—1, J. K. Rosborough; 2, E. Lorne Hume; 3, Geo. E. Fisher; 4, Dominique Robichaud.

Sec. 46—Special Standing Crop, Wheat—1, W. H. Venning; 2, J. W. Stevenson; 3, Donald Innis; 4, P. S. Bremner & Son; 5, Geo. E. Fisher; 6, E. Lorne Hume; 7, Henry Gordon.

Sec. 47—Special Standing Crop, Oats.—1, W. M. Johnston; 2, Henry Gordon; 3, E. Lorne Hume; 4, Donald Innis; 5, H. B. Parlee; 6, E. J. M. Jarvis; 7, W. E. Palmer.

Sec. 48—Special Standing Crop—Barley—1, W. H. Venning; 2, M. H. Parlee.

Sec. 49—Special Standing Crop—Buckwheat—1, H. B. Parlee; 2, E. Lorne Hume; 3, F. E. Henderson; 4, Harvey Duplisea; 5, D. Robichaud; 6, E. J. M. Jarvis.

Sec. 50—Special Standing Crop, Potatoes—1, Henry Gordon; 2, P. S. Bremner & Son; 3, E. J. M. Jarvis; 4, W. E. Palmer; 5, W. H. Moore; 6, J. Walter Inch; 7, Leslie Sharp.

Sec. 51—Special Standing Crop; Turnips—1, E. Lorne Hume; 2, P. S. Bremner & Son; 3, Harvey Duplisea; 4, Wm. E. Palmer; 5, J. Walter Inch; 6, Henry Gordon.

Sec. 52—Special C. S. G. A., Wheat—1, E. Lorne Hume; 2, Donald Innis; 3, W. E. Palmer.

Sec. 53—Special C. S. G. A., Oats—1, E. Lorne Hume; 2, Donald Innis; 3, W. E. Palmer.

Sec. 55—Special C. S. G. A., Potatoes—1, W. E. Palmer; 2, H. B. Parlee; 3, E. Lorne Hume.

Boys and Girls, Sec. 1—Wheat, any spring variety—1, Vonda Tamlyn, Sussex, Route 2; 2, E. J. W. Jarvis; 3, W. E. Palmer.

Boys and Girls, Sec. 2—Oats, any white variety—1, W. E. Palmer; 2, E. J. M. Jarvis.

S. J. MOORE, Judge.

SAVE CANADA. BRITAIN AND HER ALLIES

(Continued from page 377)

he has to face in respect to seeds, fertilizers and labor because of the war. War means hardship and service by all and acrifice to the uttermost by some. Otherwise we cannot win. The following is a part of the contents of a card to be left with each farmer:

FAMINE THREATENS OUR ALLIES

The Farmers of Canada are Called Upon to Save the Situation

This Farm is Dedicated to the Greatest Possible Production of Foods in 1918

To this end I will reconsider my plans for crops this season, and will endeavor to sow the largest acreage I can manage of wheat, barley, oats, buckwheat, rye, peas, beans, foddders, potatoes, roots and other food producing crops; and I pray that the blessing of God may rest upon our labors.

Date.....

Name .....

Address .....

County .....

Issued by the Department of Agriculture of the Province of New Brunswick in co-operation with the Dominion Department of Agriculture.

These departments earnestly request every farmer to co-operate heartily in the means adopted and with the local greater production or other committees that may be organized for the purpose of promoting agricultural production and to do his part to increase his acreage of cultivated crops and by not less thain one acre and, in the case of the better equipped farms, by from five to ten or more acres.

The lieutenant-governor will be advised to proclaim the second week of April a week dedicated to preparation for increased production. During that week the people of the province will be asked to consider and again consider how each one can help. The farmers will be requested to reconsider the areas for crops in 1918 in order that as many aditional acres as possible may be sown or planted. Seeds will be got ready. Machinery, tools and harness will be put in order. Spare parts will be provided to avoid delays in the busy season. A lost half day may affect harvest.

A committee for greater production will be organized in every parish or in as many parishes as it may be practicable to overtake this spring. The members of these committees will be practical farmers who have the confidence of the communities. It is expected that some member of the committee will personally visit every farmer in the parish to explain to him the gravity of the situation, to leave with him a card such as I have described, an dto enlist his earnest determination to do his very best this year.

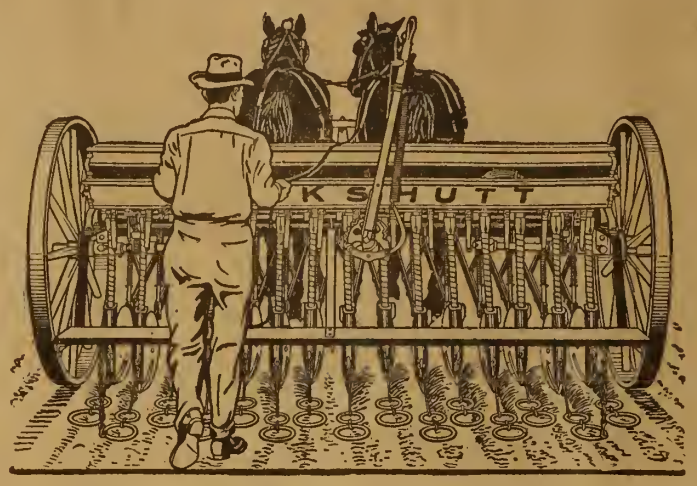
The plans for greater production provide for giving the farmers all the help which is practicable under war conditions. Further action is being taken to ensure that every farmer will be able to purchase suitable seeds; and to purchase as large supplies of ftrtilizers as can be procured for use in the province. Merchants who do their business in such a way as to enable the farmers to purchase these essentials at the lowest possible price are thereby doing real patriotic service. Such ervice has values far exceeding the amounts represented by a few dolalrs more or less profit.

Assistance will be given in the organization of means to secure and place on farams all available supplementary labor for hoeing, haying and harvesting. This will include the enrollment, placing and supervision of boys in their teens from the schools and colleges as soldiers of the soil. Each will receive a dominion national service badge.

Illustration will be made of economical ways of feeding hogs during the summer. Provision has been made for the further extension and supervision of the cultivation of vacant lots and gardens in the cities and towns. By these and other means the farmers will be assisted to do all that can be done this year and coming years to help to avert the calamity of famine which threatens our Allies and the neutral nations in Europe.

No one has the right to stand apart, or stand aloof, and merely urge a duty upon farmers. They are willing to do their best, even to the very uttermost. What they need, what they want and what they are entitled to receive, are information and guidance and assistance toward the formation of their own greater production committees in ever municipality. They also need assistance which will enable them to obtain seeds and fertilizers as far as these are obtainable and supplementary labor for hoeing, haying

Rapid but Scientific Fertilizing



With high priced commercial fertilizer you must be sure that every ounce is properly made use of

And not only used exactly where you want it and in the exact quantity you want, but done with the least possible work and attention on your part. There's where the Cockshutt Combination Seed and Fertilizer Drill comes in—big. Moreover it is a machine that will stand up under the hardest work for years and years to come and will not fail you at a critical moment. It's practically a repair-free Drill.

Cockshutt Seed and Fertilizer Disc Drill

The frame is high-carbon steel which gives immense rstength with lightness; cannot sag in the centre. Cochshutt axles always run true. Its seed and fertilizer regulators are almost human—the machine will sow any quantity of either per acre you desire to the fraction of a pint. You can sow seed and fertilizer together or either one separately. Both wheels are drivers, you sow on corners as well as in the field. When discs are raised out of ground the whole machine is thrown out of work. It is one of the neatest, easiest worked machines you have ever seen. Built in 5 sizes with either 6 or 7 inch spaces.

THE NEAREST FROST & WOOD AGENT WILL BE VERY GLAD TO EXPLAIN THE COCKSHUTT DRILL VERY THOROUGHLY WHETHER YOU WISH TO BUY NOW OR NOT. WRITE HIM OR OUR NEAREST BRANCH FOR OUR CATALOGUE.

THE FROST & WOOD CO., Limited,

Truro, N. S. ST. JOHN, N. B. Charlottetown, P. E. I.

CROWN BRAND CORN SYRUP

In "Perfect Seal" Quart Jars

These are the finest preserving jars made; and hold 3 pounds of "Crown Syrup".

Your grocer also has "Crown Syrup" in 2, 5, 10 and 20 pound tins.

Write for free Cook Book.

THE CANADA STARCH CO. LIMITED, MONTREAL. 8

Forty-nine bushels to the acre

Grown in Ontario

The splendid wheat yield pictured here was grown in Western Ontario last summer on well prepared soil enriched with 300 pounds of fertilizer.

Greater Crop Yields

Greater crop yields in Canada are of world-wide importance. European yields on old soils far exceed Canadian yields on new soils—except when improved methods produce crops like that pictured here.

Announcement: The Canadian Fertilizer Association have established a Bureau which will encourage and assist Canadian farmers to achieve greater results in soil tillage, fertility maintenance and crop production. This Soil and Crop Improvement Bureau, under the direction of Henry G. Bell, (a native of Ontario and a graduate of Ont. Agr. Coll. later Prof. of Agronomy Univ. of Me.) co-operates with all organizations working for the improvement of Canadian farming. Farmers are urged to take full advantage of this valuable information service which is free to all.

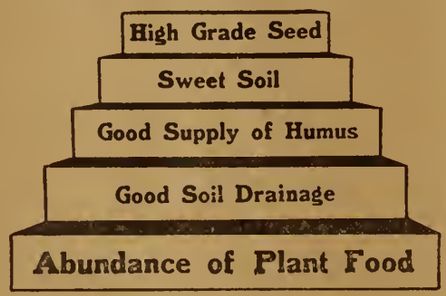
Fertilizer

If the labor problem limits areas under crop you can increase yields 50 to 75 per cent. by careful soil preparation, seed selection and judicious use of fertilizers, and thus use the labor to best effect.

Fertilizers carry exactly the same plant food coustituents as are carried by manure, but in more concentrated form.

Dr. C. A. Zavitz reported in 1917 the following *results.* Complete fertilizer used with winter wheat gave an increase of 5.2 bushels per acre at a cost of 82 cents per bushel (pre-war prices) when applied in the autumn; *and an increase of 8.3 bushels per acre at a cost of 51 cents per bushel when applied in the spring.*

STEPS TO BIGGER CROPS



What to do Now

Top-dress fall wheat with fertilizers. It is your last opportunity to increase 1918 fall wheat yields.

Prepare to fertilize spring crops.

Use fertilizers this spring and profit by high crop prices.

Manure

Manure spread thin yearly (4 or 5 tons per acre) pays better than manure applied in equal quantity at one application every four or five years.

Eight tons manure (protected from rain and snow) strengthened by 320 lbs. acid phosphate to the acre increased wheat yields at Ohio Experimental Station 5.38 bushels per acre.

Similar fertilization increased corn yields 11.54 bushels per acre.

If you do not have enough manure to apply this quantity per acre, use complete fertilizers rather than acid phosphate.

Send postal card today for Bulletin, "How to Increase Ontario Crop Yields"

Soil and Crop Improvement Bureau
of the Canadian Fertilizer Association
1111 Temple Building, Toronto

and harvesting seasons. Everything that can be done is being undertaken to meet these needs. When the farmers understand the gravity of the situation they will meet it so far as flesh and blood and unfaltering spirit can do so.

All this is war service, and because it is war service it must be done with diligence, intelligence and determination. It is not romantic or dramatic; it does not appeal to the emotions, but because it is necessary war work, it requires all the more intensity and continuity of determination on the part of those doing it. By the bessing of God a sustaining army of 400,000 farmers in Eastern Canada can save the situation. I pray that the Almighty may give the farmers and their families health and strength of body mind and soul for their heavy, heavy tasks, and that He may crown their labors by the blessing of a saving harvest."

After the address in the Legislative Assembly Hall, Dr. Robertson met the members of the Provincial Increased Production Committee and the delegates from all parts of the province in one of the committee rooms of the Assembly building where a general discussion took place.

Among the matters to which some of the delegates took exception were the taking of men from the farms for military service, the difficulty in securing feed grains from the millers, the porposed daylight saving act, the recruiting of men from the rural districts for work in cities an din the west and alleged discrimination against transportation of farm supplies in favor of automobiles and other non-essentials.

The lack of labor, seed and fertilizer were mentioned among the difficulties in the way of greatly increased production.

To the foregoing complaints, Dr. Robertson replied:

"If you had seen the way the men in the trenches overcome apparently insurrmountable obstacles, your own difficulties would seem smaller."

After a general discussion hearty support for the campaign was pledged by the deegates.

THE LOCAL FLOUR MARKET

There was no important change in the condition of the market for flour. A steady trade continues to be done in spring wheat flour for domestic and outside account, but the orders are principally for small lots to meet actual wants. Car lots of Government standard grades for shipment to country points was quoted at $11.10 per barrel in bags, f.o.b. cars, Montreal, and to city bakers at $11.20 delivered. The tone of the market for winter wheat flour remains firm, with a small business passing in broken lots at $11.40 to $11.50 per barrel in bags, ex-store. Rye flour is still scarce on spot, for which the enquiry is fairly good and prices rule firm at $7.20 per bag. The demand for corn flour is steady at $6.50 per bag.

SHORTHORNS For Profits

Shorthorn steers dressed the highest percentage at the Chicago International in 1917. Shorthorn steers are preferred by the largest buyers of feeders on the Chicago market. Shorthorn steers show greatest weight for age.

THE BREED FOR FARM OR RANCH

Write the Secretary for free Publications

DOMINION SHORTHORN BREEDERS' ASSOCIATION

W. A. DRYDEN, Pres., Brooklin, Ont. G. E. DAY, Sec., Guelph, Ont. 10

SHEEP RAISING IN BIBLICAL TIMES

The late Dr. Benjamin T. Kneeland, who was surgeon of the First New York Dragoons during the Civil War in the United States was sent with his regiment to a military camp, where the sanitary conditions in general were good, and the tents were moved frequently, the bedding aired regularly, the grounds kept clean, water supply good, and well cared for, and to all appearances everything was being done to promote the health of the soldiers. In spite of all precautions, the latrines, where was dumped all the refuse from the camp, gave forth a very displeasing and unhealthful odor. Lime and other disinfectants were freely used, but the odor persisted. Dr. Kneeland called for a detail of men and immediately had them spread a thin covering of fresh earth in the latrines. This was repeated each day. The odor soon disappeared, and the Surgeon-General, on making his rounds of inspection, mentioned that he missed the odor that had always characterized Uncle Sam's Military Camps. Dr. Kneeland explained the reason and Col. Gibbs, commander of the regiment, who was present, spoke out saying that it was a fine idea, and asked Dr. Kneeland if it was original with him. The doctor explained that it was not, that it was old and that he had gotten it from an old book. Col. Gibbs was a widely read man, and prided himself on his knowledge of things in general, and of medicine in particular. He said he would like to know what book it was. A very old book indeed Dr. Kneeland assured him, and one that he (the doctor) supposed Col. Gibbs had read, at least if he hadn't he ought to; and with that he stepped into his tent and brought out a copy of the Holy Bible. Turning to the sanitary laws of Moses he showed the Colonel his authority for the use of earth as a de-odorizer and disinfectant. Soon after this the use of earth in covering latrines became almost universal throughout the military camps.

When medical men of modern times are able to learn something relative to their own profession from so old a Book, it is not beyond the range of possibility that flock-masters may have overlooked the many references that it contains relative to the sheep industry in those days, and the amount of good advice which it offers.

The first mention of sheep in the Bible is found in Genesis 4:2, "and Abel was the keep of sheep." The 29th chapter tells of the watering of the flocks, and the second chapter of Exodus shows how the shepherds fairly fought to get a chance to water their sheep, yet in this country we sometimes find men who think the morning and evening dew, the juice of the grasses, and the snow in winter is all that is needed as drink for the sheep. In fact once in a while is found a writer who will offer such advice. It is true that water is not so plentiful in those lands, and the climate is hotter and drier than in Canada, but there is no more reason why sheep should not be watered than any other class of farm animal.

Numbers 32:24 gives an explicit command to the people to build folds for their sheep, and according to the 36th verse, they did so. All through the Bible mention is made of the folds prepared for the sheep. In modrn days are found farmers who arrange quarters for the rest of the farm stock and give the sheep any place that happens to be left, and never think of building a special place for them.

The sheep folds of Bible days were built in such a way as to prevent wolves from getting into either the fold proper or even into the yard of the fold. Would it not be equally wise to build dog-proof fences around the sheep yards in Canada to keep the dogs and the coyotes away from the flock?

Throughout the Bible is found mention of the shepherds' table being supplied with lambs and mutton, yet how many farmers of to-day use either for food? Why not have fresh mutton or lamb on the home table? Farmers' families enjoy good things to eat as well as other people, and there is no class of people who can better afford to eat fresh lamb than the farmer. He will kill a hog, and in rare cases a beef, but seldom a sheep or lamb. It is an economical and healthful meat food, and there is no good reason why farmers should not enjoy it.

There are some men who engage in the sheep business, and as soon as they lose one or two of their flock from some cause or other, immediately go out of the business. To such men, the story of Job's flocks should be of value. Job had seven thousand sheep and lost them all (Job 1: 3, 16), yet later we find Job in the sheep business, and possessed of fourteen thousands. (Job 42: 12).

The twin bearing sheep was sought in the olden days, and here too the modern farmer may get some good advice. How many farmers persistently breed twin bearing sheep, and from a ram that comes of twin bearing stock? How often do sheep men sell off the well matured lambs and when extra breeding ewe are necessary, keep those that wyould bring the least amount of money on the market which are the poorest and scrubbiest ones of the flock, paying no attention to the twin bearing and rapid growing qualities of the breeding stock, and in the purchase of a ram does not price count more than desirable qualities?

Searching for the lost sheep implies something more, that surely is plain to all. "If a man have an hundred sheep and one of them is gone astray." How can the shepherd know if one

CHEVROLET

MODEL F-A

Baby Grand Touring Car

A New, Efficient and Powerful Model which materially reduces motoring cost.

Now that the motor car is a necessity to crowd more into the busy day there is a demand for a sturdy, roomy, powerful car, economical to buy and economical to run—a car that is comfortable and will give good service day in and day out.

This new Chevrolet model fills this demand and is offered at a price far below that warranted by its value, and represents more CAR for your money than any new model on the market. See this model before you buy.

CHEVROLET MOTOR Co. of CANADA LIMITED
OSHAWA - ONT.

Western Parts and Distributing Branch: REGINA, SASK.

Baby Grand Touring Car, $1295.
Royal Mail Roadster, - 1295.
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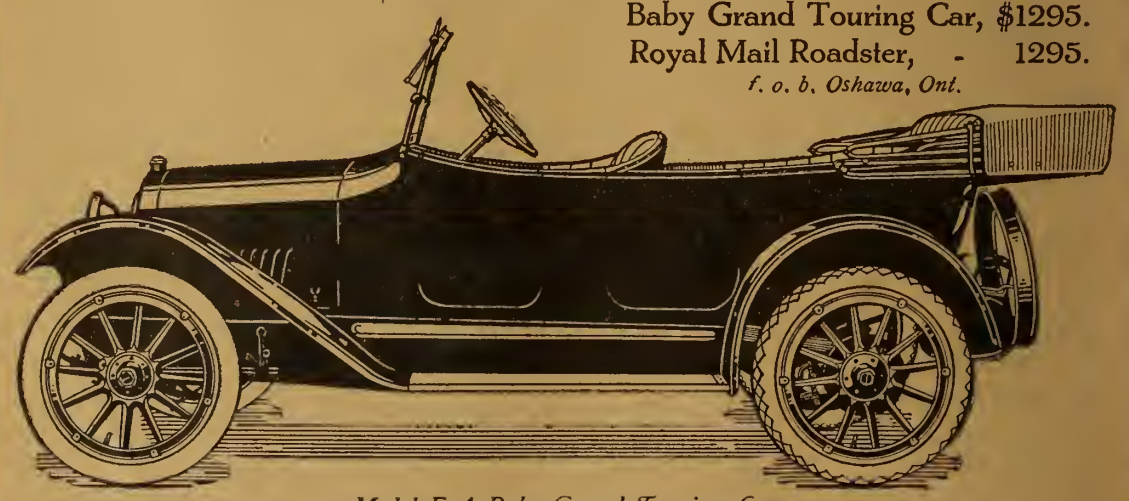


Model F-A Baby Grand Touring Car

There is a Chevrolet Show Room in your vicinity. Call and see the latest Chevrolet models.

be gone astray if he does not count his sheep unless it be one that for some special reason he would miss, and when a sheep's lost it is seldom one that he has any particular reason for missing. Every flockmaster hould aim to make it his business to count his sheep every day to see that none are lost.

John 10 tells of the sheep knowing the voice of the shepherd. This would not be possible did they not often hear him speak. This is a piece of advice that every flockmaster would do well to heed. Talk to your sheep that they may know your voice, and be not afraid. Again, "and when he putteth forth his own sheep, he goeth before them, and the sheep follow him." There are several good reasons why it is better to lead your sheep than to drive them, and sheep will follow a good shepherd. Good flockmasters lead their sheep. Do you lead yours or drive them? The good shepherd knows his sheep and his sheep know him. Would you know one of your flock if you found it in another flock? Many, no doubt, will think this impossible. Not so. Sheep do not look any more alike than persons, when you once get to know them.

David, who was a shepherd lad, and knew well the habits of the sheep, speaks in the twenty-third psalm of "still waters." Sheep do not like the swift running wataer to drink from and flockmasters should plan that their flock has an opportunity to drink where the water is "still" or smooth. Most sheep men know this yet some may not.

"And gently lead those that are with young" should impress upon all that ewes that are heavy with lamb should be handled carefully and not allowed to be excited or chased.

The ancient Israelites had shearing houses as will be found by reading 2 Kings 10: 12, and this might be a suggestion to those who use straw littered floor for sheagirring purposes. A clean place to shear will keep the fleece cleaner and assure a higher price for the wool.

There is nothing new in all this, in fact it would be strange indeed if there were, for farmers in Canada are Christian men, who have read this wonderful book and obtained from it all that is here contained, yet it is more than possible that they never before had it all tigether in one article.—By A. K. LeMarr, in Thornbury Review-Herald.

WINTERING YOUNG HORSES OUTSIDE

(Experimental Farms Note.)

With the prevailing high cost of building material and labor, many farmers are deterred from going very extensively into live stock raising under the impression that a heavy outlay for buildings is necessary.

Such is not the case. While work horses and milking cows require warm stabling, sheep and poultry, in order to be profitable, must be kept away from warm quarters; brood sows do excellently in small individual cabins; young cattle thrive when running outside with only a shed for shelter. Even dry cows and idle work horses can be wintered under cheap shelter.

The reason these classes of live stock do so well wintered outside is that they get what is hard to obtain when kept inside, namely fresh air and exercise, and are, as a result, in good health and fit for profitable breeding operations.

Wintering Young Horses at Cap Rouge

During five years, fifteen different young horses were wintered outside, at Cap Rouge Experimental Station with only single board sheds as shelters. Though the temperature went down as low as thirty-one degrees F. below zero, not a single one has ever been known to shiver. Moreover, as a rule they commence to shed their hair earlier in the spring than others kept in the barn. During an outbreak of influenza, all the animals inside were sick whilst not one of those in the open was affected.

Shelters

Any shed which is free of draughts, and with an opening to the south, will answer the purose. If it is placed on a slight elevation, so that water may not run in, there is no need of a floor, ground floors are best. Shingles or paper may be used for the roof, which must be perfectly rain-proof, for metal will get the place too warm during the summer. As only one thickness of lumber forms the sides, it should be grooved and tongued.

Feed Requirements Outside

The main objection to keeping stock in cold shelters during winter has been that more feed is required. That the contention is correct cannot be disputed, if the conditions were always perfect in warm stables. But, as a matter of fact, there are very few well ventilated barns in the country and it is a question whether there is not as much loss of feed through bad digestion, due t o the foul air breathed inside such buildings, as through the extra amount given outside.

DUNLOP TIRES

What "Dunlop" Means

PEOPLE never speak of over-production in Quality, yet we might "trim down" "Traction" or "Special" and conscientiously sell them to you as good tires. But we could not still call them "Dunlop." That word in tire value means more than merely making a tire. It means a reputation for superior tire-making that embraces nearly a quarter of a century—a reputation which was obtained only by endless energy, and is maintained only by ceaseless vigilance.

A. 93

"SPECIAL" - "TRACTION"

Every planting season you stake land, fertilizer, time, work, and the cost of the seed on the good faith of your Seedsmen.

Every season for Forty-five years EWING'S SEEDS have justified this good faith.

They are clean and fresh—they show a very high percentage of germination—and are true to name and type. They include all the best of the new varieties, as well as the old favorites.

Write early for our new Illustrated Catalogue, and if your dealer hasn't Ewing's Seeds, order from us direct.

The William Ewing Co., Limited
Seed Merchants, McGill St., Montreal. 62

Ewing's "Improved Hanson" Lettuce

A "crisp heading" variety that is very hardy and will stand extremes of weather. Head is large, hard, tender and crisp, with blanched centre; wholly free from bitterness, and remains long in excellent condition.

¼ lb. 90c; oz. 30c; pkt. 5c.
Sent postage paid—cash with order.

FARM HELP AVAILABLE

25000 Older Canadian Boys Have Volunteered

TO HELP THE FARMERS

Last year 7,000 Older Boys demonstrated to the farmers of Canada that they could help take the place of the regular farm help that has gone overseas.

They proved their willingness and ability to adapt themselves to farm work.

This year many farmers are asking for boys.

Already 25,000 boys between 15 and 19 years of age in Ontario and western Canada have offered their services as SOLDIERS OF THE SOIL. The enrollment week for New Brunswick takes place April 28th to May 4th. The plan is to have the boys fill in the enrollment forms which will be turned over to the Department of Agriculture.

The farmers are asked to write to the Minister of Agriculture stating what help they require and for what period.

Arrangements as to wages will be agreed upon by the farmer and the boy.

J. F. TWEEDDALE,
Minister for Agriculture.
Fredericton, N. B.

S. O. S.

Apropo the Soldiers of the Soil movement outlined above, Mr. Reek, Deputy Minisiter of Agriculture for New Brunswick recently issued the following letter to every Agricultural Society Secretary in the Province.

"It is needless for me to mention to you the great need for production, because every man in Canada is aware of the very serious conditions in the allied countries.

"Labor is one of the greatest obstacles to overcome and in order to give some assistance, boys from 15 to 19 years of age are being enlisted to work on farms throughout the summer months. It is not anticipated they will take the place of men, but by a tlitle training they will undoubtedly assist in the work. The wages are to be arranged by the farmer and a travelling supervisor in order that the boy may receive just what he is worth and no more; the forms to be filled ask what wages the farmer expects to pay but this is only approximate.

Will you kindly bring this before your Society immediately, and if any farmers wish to avail themselves of this help fill in the forms and return to me. Please do not hesitate because there is only one month to make arrangements."

FARMER'S APPLICATION FOR BOY TO THE PROVINCIAL EMPLOYMENT BUREAU

.....191

I desire to secure a boy for farm work commencing.....191
The wages I expect to pay will be.....with board.
I will require the services of the boy until .....
Size of Farm.....
Number of men employed.....
Religious Denomination.....
Will boy have separate room or bed?
.....If not, with whom shall be share his bed?.....
Kind of work boy will be expected to do .....
.....

This application will hold good until such time as I notify your office to cancel it.

Yours truly,

Name .....
Post Office.....
Railway Station.....

MARKETS.

Feeds

The following are the wholesale prices for Bran, Middlings and Flour delivered at Main I. C. R. points, west of Painsec Junction:—

Bran.....$37.90 per ton
Middlings.....$45.90 per ton
Flour (Manitoba War Standard) $11.65 per barrel

For points east of Painsec Junction add 1c per 100 and 1½c per 100 for Cape Breton points. On Branch Lines it will be necessary to add Local Freights in order to fix the delivery charge. These prices are fixed by the Food Controller at Ottawa.

HALIFAX

Potatoes, $1.90 bag.
Carrots, $2.50 bbl.
Turnips, $1.25 bag 100 lbs.
Parsnips, $3.00 bbl.
Butter, Creamery, 58c.
Butter, Dairy, 53c.
Cheese, 24c.

ST. JOHN

(Wholesale Prices).
Beef, Western, 17c to 20c.
Beef, Country, 12c to 17c.
Veal, 15c to 20c.
Hogs, 23c to 25c.
Lamb, 23c to 25c.
Mutton, 18c to 22c.
Beef Hides, 10c.
Sheep Skins, $2.00 to $3.00.
Calf Skins, 28c.
Potatoes, $2.75.
Carrots, $2.50.
Turnips, $1.25.
Parsnips, $2.50.
Chickens, None.
Fowl, $40c to 45c.
Turkeys, 35c to 45c.
Butter, Creamery, 46c to 50c.
Butter, Dairy, 42c to 46c.
Cheese, 30c.
Eggs, 45c to 47c.

CHARLOTTETOWN

Beef, Carcass, 12c to 16c; Retail 8 to 26c.
Veal, None
Hogs, Selects, 21¼, usual Disct. for light and heavy.
Lamb, None.
Mutton, 14 to 17c by the carcass. Very scarce.
Beef Hides, 8c.

"Harnessing the Air" to Save Butterfat

The air is a great wizard. Properly employed, (as in a Sharples Suction-feed Separator) it will save North America more than eighty million pounds of butter which fixed-feed separators *waste* because 95% of them are turned below speed much of the time.

The Sharples Suction-feed principle really harnesses the air and makes it work for you. By means of the suction-feed, just enough milk enters the tubular bowl as can be *perfectly separated*. As your speed varies so does the suction-feed. Thus, Sharples saves the cream waste that results when fixed-feed separators are turned under speed.

SHARPLES SUCTION-FEED CREAM SEPARATOR

Skims Clean at Any Speed

While *air* is free to everybody, yet the suction-feed principle is exclusive with Sharples and fully protected. Bear that in mind when you investigate a separator and insist on knowing if it will *skim clean at any speed*. Get *proof*.

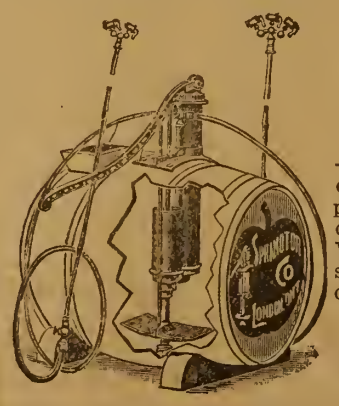
There are *no* discs in a Sharples tubular bowl which adds further to its superiority. The one-piece bowl is easy to clean, easy to turn—even for a boy. Write nearest office for catalog, addressing Dept. 79

Toronto, Ont. **The Sharples Separator Co.** Regina, Sask.
The Mitchell & McGregor Hardware Co., Brandon, Man.
Distributors for Manitoba
DC-21

The Most Modern Weapon

For Protecting Your Field and Orchard Crops

from being destroyed, (or their market value lessened) is the SPRAMOTOR. It will enable you to combat the potato beetle and blight quickly and effectively—in the orchard—to produce 75% No. 1 fruit and have cleaner, healthier trees—free from scale and bark-louse.



Spramotor
Isn't a SPRAMOTOR unless we made it

We make a complete line of sprayers—one for every need from the small hand outfit to the large 250 gallon gasoline power sprayers. They are all Spramotors, and range in price from $7 to $400. Write us for requirements or at least send for our catalogue and Free booklet on Crop Disease. Get your copy to-day.

Made in Canada. No duty to pay.

THE LONDON SPRAMOTOR
5038 King St. East, London, Canada.

Sheep Skins, $3.50 to $5.00.
Calf Skins, None.
Potatoes, Price to farmers now, 60c per bushel, bulk.
Carrots, None offering.
Turnips, 20c bush. of 50 lbs.
Parsnips, None offering.
Oats, $1.05 to $1.10; recleaned seed, $1.25 to $1.50.
Cornmeal, None.
Bran, $42.00 to $44.00 per ton.
Oatmeal, $6.25 to $6.50 per sack of 98 lbs.
Middlings, $50.00 per ton.
Cotton Seed Meal, None.
Oil Cake, $3.75 per sack of 100 lbs.
Buckwheat, None.
Ontario Flour, $12.00 to $12.50.
Manitoba Flour, $12.75 to $13.25.
Chickens, None.
Butter, Creamery, 48c to 52c.
Butter, Dairy, 40c to 46c.
Cheese, Twins, 23½; wholesale, 23c.
Eggs, 40c per doz.
Hay, Pressed, $1.00 per 100 lbs.
Hay, Loose, 90c to $1.00 per 100 lbs.

MONTREAL

DAIRY PRODUCE TRADE

The receipts of butter today were 96 packages, as compared with 127 for the same day last week, and 434 for the corresponding date a year ago. There was no actual change in the condition of the market for creamery butter today, but the undertone was strong and the feeling in some quarters of the trade was that prices may possibly advance in the near future on account of the very limited quantities of finest goods available on spot. A buyer today bid 49c per lb. f.o.b. point of shipment for a lot of finest new-milk creamery and did not get it, which would indicate that it was sold at a higher figure. A steady trade continues to be done in oleomargarine in a wholesale jobbing way and prices are unchanged at 32c to 34c per lb. as to quality.

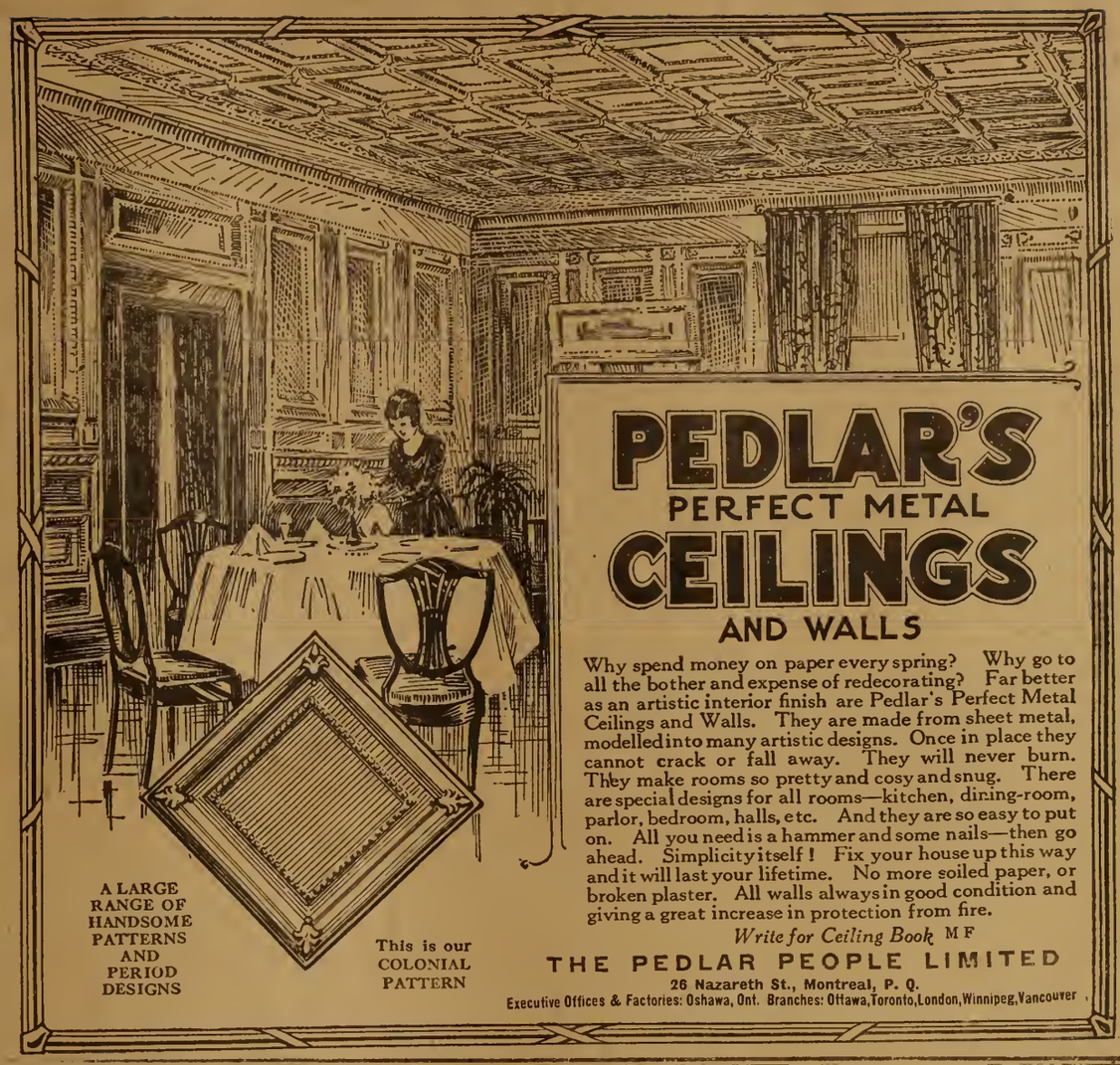
We quote prices as follows:

Finest Sept. and Oct. creamery	49c to 49½c
Fine Sept. and Oct. creamery	48c to 48½c
Finest dairy	42c to 43c
Fine dairy	40½c to 41½c

The receipts of cheese today were 113 boxes, as against 98 for the same day last week, and 39 for the corresponding date a year ago. The market today was without any new feature to note. A fair amount of business continues to be done for the season of the year for both export and domestic account and sales of small lots of 20-lb. cheese and twins were made at 23c per lb.

The Commission is paying the following prices:

No. 1 cheese	21¾c
No. 2 cheese	21¼c
No. 3 cheese	20¾c



A LARGE RANGE OF HANDSOME PATTERNS AND PERIOD DESIGNS

This is our COLONIAL PATTERN

PEDLAR'S
PERFECT METAL
CEILINGS
AND WALLS

Why spend money on paper every spring? Why go to all the bother and expense of redecorating? Far better as an artistic interior finish are Pedlar's Perfect Metal Ceilings and Walls. They are made from sheet metal, modelled into many artistic designs. Once in place they cannot crack or fall away. They will never burn. They make rooms so pretty and cosy and snug. There are special designs for all rooms—kitchen, dining-room, parlor, bedroom, halls, etc. And they are so easy to put on. All you need is a hammer and some nails—then go ahead. Simplicity itself! Fix your house up this way and it will last your lifetime. No more soiled paper, or broken plaster. All walls always in good condition and giving a great increase in protection from fire.

Write for Ceiling Book M F

THE PEDLAR PEOPLE LIMITED
26 Nazareth St., Montreal, P. Q.
Executive Offices & Factories: Oshawa, Ont. Branches: Ottawa, Toronto, London, Winnipeg, Vancouver

"SERVICE" STOVES SATISFY

"FAVORITE"

No. 8; 8-in. COVERS
No. 9, 9-in COVERS
OVEN, 11¾ x 12½ x 19
FIRE BOX, 10 x 8½ x 25
WEIGHT, 400 lbs.

BAKE WELL HEAT WELL

Can always be relied on
Unequalled for Comfort
Low-Priced; no Trimmings, no Fancy Work

MADE IN CANADA

Plain, but Serviceable
Give warmth quickly
Burn any kind of wood
COAL FITTINGS OBTAINABLE

THOUSANDS IN USE

"NIAGARA"

No. 2, 8-in. COVERS. No. 3, 9-in. COVERS
No. 2 OVEN 8 ¾ x 11 x 20¼
No. 3 OVEN, 9 x 12½ x 22¼
No. 2 FIRE-BOX, 6 x 7 x 23
No. 3 FIRE-BOX, 7 x 9 x 26
No. 2 WEIGHS 200 LBS. No. 3, 270 LBS.

MADE OF DEPENDABLE CAST IRON BY
THE SMITH FOUNDRY COMPANY, LTD.
FREDERICTON, NEW BRUNSWICK

GENUINE DIAMONDS
CASH or CREDIT
Terms : 20% Down and $1–$2–$3 Weekly.
We trust any Honest Person
Write for Catalogue o-day
JACOB BROS., Diamond Imp., 15 Toronto Arcade, Toronto

THE EXPERT JUDGE AND COMPETENT BUYER OF HORSES

(Continued from page 387)

technically termed, is most marked in the old horse and practically absent in the young one, the part being filled with fat. To make an old horse appear younger, the "gyp" horse dealer fills the cavity with air, a trick called "puffing the glims." The finger detects this at once, as a cracking sound is emitted on handling, and in addition one will notice that the hair on the temple of an old horse has turned grey, while the lower jawbone feels sharp and thin, and the wearing of the grinding tables of the teeth also tells the story of advanced years.

In a dark place the pupils of sound eyes dilated, so lead the horse into the light and notice if contraction of the pupils occurs. If it does not, the eyes are unsound. In blindness from paralysis of the retina and optic nerves (amourosis, or "gass eye") the pupils are permanently dilated and the eyes consequently appear unusally bright and prominent, although the horse is "stone blnd." Such a horse can look squarely at the sun without blinking or contraction of the pupils, whereas a horse that is almost entirely blind sees a glimmer of light when turned to the sun, shows it by looking upward, whereupon the tricky dealer remarks to the unwary buyer: "See what strong eyes he has. He can look right into the sun."

Books and articles on the examination of horses for soundness advise that the soundness of the eye should be tested by a threatened blow of the hand. If the horse can see he flinches on noticing the approach of the hand, otherwise there is no winking of the eyelids. This test is useless if not very gently done. A blind horse will wink if he feels a column of cold air strike the eye, or if the fingers touch one of the long hairs projecting from the skin under the eye. Look for these long hairs. They are called "tentacles," have special nerve endings, so are sensitive and when touched communicate the message of impending danger to the brain, and the eyelids instantly close They serve the same purpose as the long hairs or feelers projecting from each side of the muzzle of the cat, and in the horse also are found in that region.

A. S. ALEXANDER, M.D.C.

AGRICULTURAL SOCIETIES UNTED SEEK WIDER POWERS

Has Asked the Government to Extend Scope so that Feeds and other Commodities May be Handled Wholesale

The New Brunswick Agricultural Societies United has asked the New Brunswick government for additional powers in respect to carrying on its business in this province. Under the order-in-council under which the organization was established, only fertilizers can be handled. The act, however, enables the governor-in-council to extend the usefulness of the institution and it is felt that the time has arrived when greater powers should be asked for. The work done by the N. B. Agricultural Societies United, has been of great benefit to the farmers of the province. Thousands of dollars have been saved through the co-operative purchases of fertilizers. The demand is now that other lines be added to the fertilizer side of the business and when the authority is secured, the work will be undertaken. It is well to again repeat that all agricultural societies in the province who are interested, should get their fertilizer orders for 1919 under way at once. It is certain that the supply for 1918 will be far short of the demand. Next year conditions will be worse, if anything, and those who want chemical fertilizers should take action NOW.

THE CORN CROP IN QUEEBC

Nearly every farmer knows what his corn crop means to him in his live stock work. First, it makes, when put into the silo, one of the cheapest and most palatable of feeds as well as one that makes a good balanced ration with clover, hay, roots, and a small amount of grain, for milk production as well as beef. It is also very serviceable to feed to sheep, idle horses and colts, in limited quantities. Second, it is one of the best crops to work into your farm rotation, for the frequent cultivations that are necessary to get the best results with corn, clean the soil well of weeds and leave it in the best possible shape for the following crop, which is generally grain of some kind seeded down with ten to twelve pounds of clover and ten pounds timothy added per acre.

At the Experimental Station, Lennoxville, Que., it has been found that corn does the best on a clover sod. Manure is spread in winter on the corn ground as drawn from the stables, so as to save labour, at the rate of about fifteen tons of manure per acre.

In spring this manure is ploughed under with the green sod, turning quite a shallow furrow, say five inches. The manure and green sod, when turned under and packed properly, commence to decay, warm up the soil and give the yuon gcorn roots the best chance possible. The ploughing of the corn ground may be left until nearly ready to plant, for the soil is then generally in better shape to work. The plough si followed with the double disc harrow so as to pack the furrows, save evaporation and also to get a good seed bed before the soil gets baked, as it will if left exposed to the sun long after ploughing before being worked.

By all means be sure to have as perfect a seed bed as possible before planting, for that is half of the battle. When you have this be sure to have the best seed possible with good germinating qualities and of the variety best adapted to your district.

At Lennoxville, in the Flint varieties, Compton Early and Longfellow, and in Dents, Wisconsin No. 7 and Early Leaming have been found to be about the best.

Corn should be planted thirty-six to forty inches apart in rows according to the variety, but if weeds and couch grass are present it might be preferable to plant in hills three feet apart each way, in order to allow for cultivation both ways. When planting in rows, try to arrange to have the rows run north to south in order to let in the most sun possible, which is needed so much in this district for this crop. Frequent cultivation and the hoe around the plants are very essential.

As to the mode of harvesting and conserving this important crop, the silo is strongly recommended, but if shocked up in quite large shocks and tied with binder twine near the top, and left in the field until required, the corn makes very good feed when run through the cutter, though not nearly so much relished as is the ensilage.

A NEW PLAN FOR COW TESTING

The time has come when a change of pla nfor the cow testing work seems to be imperative. The Dairy Record Centres have served their purpose, but a more comprehensive scheme, whereby the whole country will be covered instead of limited areas, now seems to be necessary. This is all the more important in view of the desirability of increasing production as much as possible, and there is no simpler or easier way of increasing dairy production than to improve the yield of the dairy herds.

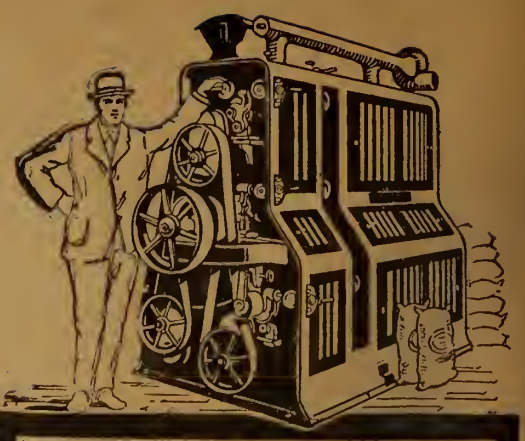
The Dairy Record Centres will cease to exist and the position of Dairy Recorder will be abolished after May 1, 1918. In place of such organization the Department will enlist the services of cheesemakers, buttermakers and other qualified persons to test samples of milk, paying sufficient to make it worth while for anyone to give some attention to it.

By transferring the work of the Dairy Recorders to a larger number of persons who are already employed, some 3 men will be released for other work.

The average yield of milk per cow has increased 30 per cent. in recent years, but there is still room for improvement.

By this new plan we hope to reach a large number of milk producers who have not so far been keeping records and thus give a further impetus to herd improvement.

J. A. RUDDICK,



Be the Miller in Your Town

Thousands of new acres of wheat mean increased production this year. Governments — Federal and Provincial—are behind this great movement for bigger production.

Your community will grow wheat. Be the man who will turn it into flour.

A Marvel Mill

offers you this opportunity. *A Marvel Mill makes a better barrel of flour cheaper.* It will mill any grade or any grain. It helps relieve waste and shortage.

It Makes Real Profit for You

Here is an opportunity to establish yourself in a substantial, money-making business and serve your country's greatest need. One man can operate a Marvel Mill — no expensive buildings needed. If you have as little as $3000 to invest you should get all the facts of this proposition at once. Write today.

The Canadian Fairbanks-Morse Co., Limited

St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windsor, Winnipeg, Saskatoon, Calgary.
54

Palmer's Summer Packs

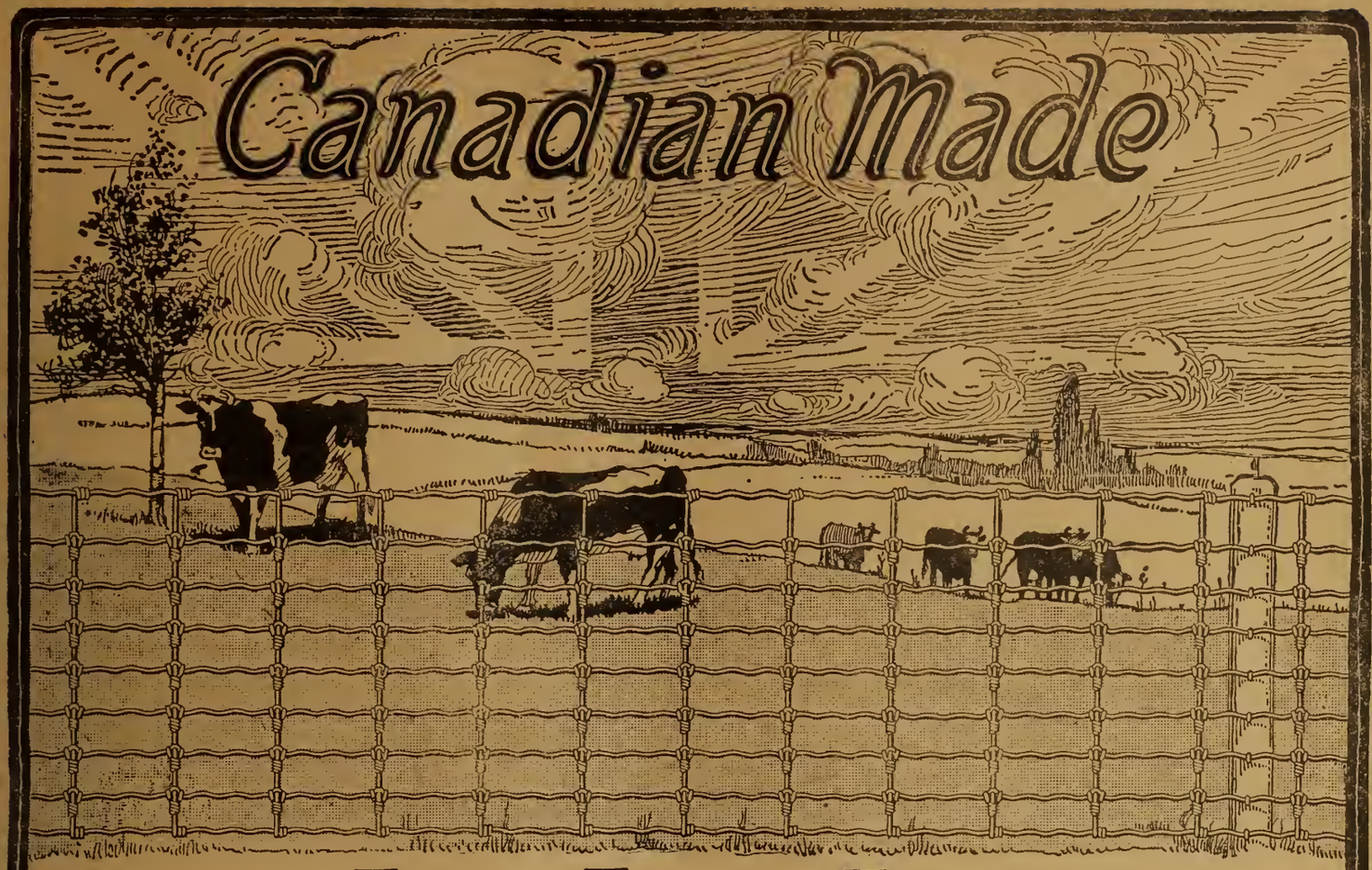
JOHN PALMER CO. Ltd MOOSE HEAD BRAND FREDERICTON N.B.

are sometimes called plough shoes or harvest shoes because they are especially designed for wear in the ploughing and harvesting seasons.

You will not be troubled with tired, aching feet after doing a hard day's work in Palmer's Summer Packs, because they are light in weight, durable, roomy, comfortable and waterproof.

Ask your dealer for a pair of these. "Moose Head Brand" shown above is stamped on every pair.

JOHN PALMER CO., LTD.
FREDERICTON, N.B., CANADA. 34



Frost Fence First

Here stands a FROST fence—one of the thousands defying the stress of weather and strain of usage on Canadian farms.

In every Province of the wide Dominion you will find FROST fences giving service that makes their owners proud.

FROST fence stands up bravely and triumphantly against all kinds of Canadian weather because all varieties of Canadian climate are taken into consideration when making FROST fence.

Unlike common fence, ordinary commercial wire is not used for FROST fence. We make the wire for FROST fence in our own wire mills. The steel has the right temper and the wires the smooth, careful galvanizing that is required to withstand extremes of Canadian temperature, fog, snow, hail and rain.

The laterals have the special FROST wave, that makes the fence exceptionally elastic and enables it to withstand strains that would rip and snap an ordinary fence.

The FROST lock is unlike any other. Look at it. There is nothing cheap or flimsy about it. Plenty of wire, and to spare, is used to wrap it around the stay and lateral so that it cannot work loose.

SERVICEABILITY is put into every inch of FROST fence. It is FIRST in quality as well as FIRST in sales. It is FIRST choice with those who want the longest service and the neatest, strongest fence they can get for their money.

A style for every purpose. If you do not know a nearby dealer, write us direct. 102

FROST STEEL AND WIRE COMPANY, LIMITED, Hamilton, Canada

GREAT SHEEP DRIVE IN NOVA SCOTIA

Not many years ago almost every farmer in Nova Scotia had a few sheep but we find today very few farmers have any. Fifteen meetings during the last week in February and the first week in March were held in Cumberland County. Both Provincial and Federal officials took part at these meetings. This is an ideal county for sheep raising and it is expected that there will be a large increase this year in numbers kept. Many farmers wish to buy sheep at the present time, but there are very few for sale in this district.

The principle reason for the decrease has been the dog nuisance. Therefore, if this drive is going to be successful there must be a hard and fast law to protect the sheep industry from dogs. The law to shoot the dog caught worrying sheep is useless as 90% of the farmers would rather do away with their sheep than have trouble with their neighbors. The new dog law in Pennsylvania which went into effect on January 15th could well be applied to Canada. It provides that every owner of a dog 6 months old or more must obtain a license from his County officials costing $1 to $2 for male dogs and from $2 to $4 for females. A metal tag accompanies each license and must be worn by the dog at all times. Furthermore all dogs shall between sunset and sunrise be confined within an enclosure firmly secured by a collar which will retain them on the premises. Under an effective law such as this farmers will be encouraged to go into the sheep indutry for it is, at present prices, exceedingly profitable.

Some years ago this was not the case for under the method of marketing the lambs and wool poor returns were obtained. The increased returns are due to the general upward trend of prices and to co-operative selling in wool and lambs. Wool experts have been employed since 1913 by the Federal Department of Agriculture to demonstrate the best method of preparing wool for sale. There has been great improvement in the condition in which wool is offered for sale so that it finds a wider market and buyers are eager to purchase it which was not so a few years ago. Canadian wool was formerly a drug on the market, but it finds a ready sale now on markets where it was unknown before. The same is true of co-operative sales of lambs where it has been tried.

When we consider the great need of having our boys overseas well clothed and that we are only raising enough wool to give each of them a pair of pants per year, it is evident they would soon be out of business if they had to depend upon the wool grown in Canada. To clothe them we have to omport approximately 26,000,000 pounds of wool which could be easily raised in this country. It would mean approximately $15,000,000 to the sheep farmers instead of being sent abroad.

Hints re Wool

Don't tubwash your wool; the user does not want it and he can take better care of the washing than you can.

Don't keep the wool in the cellar be fore marketing for you are sure to lose money by having it damp. Dampness causes the wool to be discolored.

Don't leave the tags on the fleece for they will be taken off when it is graded and more wool with them than you would take by clipping before shearing.

Don't tie the fleece with sisal twine; use paper twine only. This can be had on application to the Secretary or Manager of the Canadian Co-operative Wool Growers, Ltd., 128 Simcoe St., Toronto, Ont.

Don't sell your wool to the peddler. If you have not got a grading station near you, send it to the nearest co-operative Wool Association where it will be graded. Remember that the

larger quantity the better the price. 100,000 puonds is worth more per pound than 1.000 lbs. to the wool buyer.

Don't have our boys overseas wearing clothes made of paper and cotton as the Germans have. staying at home and raising wool is doing your bit. Don't depend on yourscf to handle your lamb and wool crop, become a shareholder in the Canadian Co-operative Wool Growers Ltd., and get the assistance of your fellow sheep raiser; it means protection of your markets in the future.

THE ADVANTAGE OF TILE DRAINAGE

(Experimental Farms Note.)

At the Experimental Station, Ste. Anne de la Pocatiere, Que., an experiment on drainage has been conducted the results of which should be of great interest to farmers. as they teach an eloquent lesson in favor of good soil drainage, a practice which should be encouraged as much possible in these days when maximum production is the duty of every farmer.

A certain area of level land was taken for the experiment and divided into two fields, A and B, absolutely similar in every way. Field A was under-drained by means of three-inch tile placed at a depth of four feet and thirty feet apart. Field B was not tile drained but had perfect surface drainage. These two fields were cultivated and treated exactly alike; rotation. cultural methods, manure, choice and quality of seed. etc., being the same in each case.

Close observation has shown that larger yields were obtained on the tile drained area each year than on that which was only surfaced rained. The difference was rather small the year following the laying of the tile, was larger the following year and became quite marked the third year. It was most marked among crops like corn which require more warmth. In 1917 the crop of corn on the drained field was more than twice as great as that on the undrained field. the exact difference be ing 108 per cent. wheat yielding 72 per cent more and hay 20 per cent. It might, however, be noted that the fact that the eason of 1917 was exceptionally late and damp gave a special advantage to the drained area and the results might not be so marked in a normal year.

The difference in crop yields, however. is not the only point in favor of tile drainage, there are other good effects also. After three years the experiment has proved that the soil on the tile drained area has become much more porous and more mellow than the soil which was only surface dra.ned. It can be cultivated more easily and can be worked and sown earlier in the spring. It will be readily seen that this is of great importance in Eastern Quebec where the springs are often late and the growing season relatively short. Beside this, while the soil on the undrained area dried and cracked. allowing the crops to make hardly any growth during the dry weather in July. the drained land did not show the least cracking, and the plants continued their development uninterruptedly. This difference is easily explained; the drained soil was left permeable to air and moisture, the air circulated freely and the moisture rose by capillary action without difficulty through the subsoil to the roots, while the undrained soil hardened and split, and the roots withered for lack of air and moisture.

PASTURE FOR HOGS.

The feed situation confronting the swine grower during the coming summer is not altogether a bright one. Standard hog-feeds are not likely to be plentiful, with high prices ruling. Shorts and middlings, while fixed as to price, show no likelihood of a surplus. Corn, for some months practically unprocurable, and in any case too high in price to be considered,—may be available, but whether in reliable constant quantities remains to be seen. Barley will be high priced also and difficulty available in many localities. Oats, under ruling and probable future prices, should be used only for the milking sow and for weaned and growing pigs. Only in small quantities should this feed enter into the fattening ration. It has been shown that with breeding stock, whether during winter or summer maintenance, cheap home grown feeds may be largely utilized as an economy and that from such feeding practice best results may be obtained in health and production. It has been, further, clearly demonstrated, that home grown feeds for summer feeding may economically replace a considerable percentage of meal even at pre-war prices.

At the Experimental Farm, Brandon, it was shown by experiment during the summer of 1916 that oats, barley and wheat all stood pasturing well. These were sown on May 17 and pastured from July 5th until early in August. Rape, which was slightly injured by pasturing too early, supplied much needed pasturage when the cereal seedings had been eaten off. Vetches although slow of growth, were readily eaten and stood pasturing well. Sweet clover, was also late in maturing and eaten only when no other feed was available.

It might be stated that beyond a comparison of these crops from the standpoint of palatability, recuperative power, and ability to withstand trampling and pasturing generally, no data was available to show the cost of production one crop against the other.

With these pasture crops a self-feeder was used to supply a supplemental grain ration. Such practice indicated that no more than where hand feeding was employed and that economical gains were made at a cost of 5 cents per pound for grain and pasture, employing feed prices then cur-

CANADA

Military Service Act

Important Announcement to All

EXEMPTED MEN

and to the Public Generally

IN dealing with the very large number of claims for exemption brought forward for consideration in connection with Class 1 under the Military Service Act, it has occurred, as was inevitable, that as a result of false statements and difficulties put in the way of investigation, some individuals have secured exemption whose proper place is in the Army.

It is not the intention of the Government to allow these men to evade permanently their obligation to bear their part in the military defence of the Country and of the ideals for which we are fighting. To do so would defeat the purpose of the Act, and cause grave injustice to men in the second class necessarily called out to fill their places.

Exemptions Granted on False Grounds

It is, therefore, proposed to scrutinize carefully all exemptions granted to date in order to separate those which have been granted on false or insufficient grounds from those that are well founded.

With this object in view the various Registrars under the Military Service Act have been instructed to issue a series of questionnaires to exempted men. These questionnaires must be filled up correctly and returned promptly under penalty of forfeiture of exemption for failure to do so.

Exempted Men Who Have Changed Address

It is therefore important in their own interest that all exempted men who have changed their address since their exemption was granted and who have not already notified the Registrar of such change should notify him at once. Under the Regulations it is the duty of exempted men to keep the Registrar advised of any change of address, and failure to receive the questionnaire by reason of neglect of this duty must be treated as equivalent to failure to return the questionnaire after receipt.

Citizens Urged to Assist

In many instances information has been furnished by members of the public which has led to the cancellation of exemptions obtained by false or misleading statements. Further co-operation of this character is invited. The Government regard it as the Duty of all loyal citizens, not only to the Country, but to the men at the front, to assist in this way in securing reinforcements on a just and legal basis. Correspondence of this character will be treated as strictly confidential and will receive the fullest investigation.

CHARLES J. DOHERTY,
Minister of Justice.

Correspondence should be addressed to the Registrars under the Military Service Act.

W. A. Ewing, K .C. Registrar under the Military Service Act, St. John, N. B.

E. Hart Nichols, Esq., Registrar under the Military Service Act, Halifax, N. S. 402

rent. The method in general reduced the labour of feeding to the minimum.

At the Experimental Station, Lacombe, where swine feeding enters largely into live stock operations, rape and alfalfa have proven most desirable crops. As a result of the average of three tests, rape has shown a slight superiority over alfalfa requiring 3.8 pounds meal fed supplementally as against 3.83 pounds in the case of alfalfa. Rape carried 1786.1 pounds of pork per acre as against 1518.9 pounds with alfalfa.

The findings at Lacombe would warrant the recommendation of alfalfa for early pasture with a block of rape to supply green food for hogs when they attain considerable size. Where alfalfa may be successfully grown, the swine grower would be well advised in retaining a small block for swine feeding purposes. Failing alfalfa, clover will give almost equally good results. With neither of the legumes available, results at Lacombe indicate that a cereal pasture second only to the legumes, is to be obtained by the use of a heavy seeding (3 bushels per acre) of oats and barley, or wheat, oats and barley.

Any one of the pastures above mentioned should be followed by rape seeded early in June, preferably in drills 27 inches apart.

At Lacombe the results of the use of self-feeders versus hand-feeding on pasture, while not sufficiently verified by repeated experiment, would indicate that where hogs are fed to a finish the self-feeding method shows most economical gains. It has been proven where corn is the principal grain used, self-feeding is more economical than hand-feeding. That this is also the case where mixed grains, wheat by-products and feeding concentrates are used, is indicated by the results at Ottawa, Lacombe, Brandon and elsewhere on the Experimental Farms System.

At the Experimental Station at Lethbridge excellent results have been obtained from alfalfa and peas, the hogs being allowed access to both crops at the same time. Here of course alfalfa is one of the most dependable crops grown, conditions being in all respects suited to its culture.

While much evidence is, therefore, at hand, to show that alfalfa possibly holds first place as a hog pasture, it must be remembered thmat in many sections of Canada this crop cannot be grown at all, in many others that it is unreliable in the extreme, and that even under more or less favorable soil and climatic conditions for one reason or another it cannot always be relied upon. For reliability and wide cultural possibilities and from the standpoint of palatability, producing power and resistance to pasturing, red clover should receive emphasis equal to, if not greater than, that given alfalfa.

In conclusion, high priced grain and meal for hogs must be replaced, as far as possible, during the coming summer. Pastures, as discussed, form a home grown, palatable, easily available food, that is harvested without labour. The self-feeder combines well with pasturing, and for growing and finishing hogs is peculiarly worthy of attention during present labour scarcity.

PACKING AND SHIPPING APPLES

When labour is as scarce as it is at present, the employment of the inexperienced is unavoidable. Hence "Notes to Beginners", given in Bulletin No. 2 of the Fruit Commissioners Series entitled "Modern Methods of Packing Apples," become of prime importance. These notes run:

1. Learn to size your fruit accurately and the placing in the box is a simple matter.

2. All apples are placed in the box in the same relative position. It cannot be impressed too strongly upon beginners that all sizes and shapes of apples can be properly and conveniently packed in the standard Canadian apple box.

3. Successful packing can only be done with apples of a uniform size in each box. There is no possibility of using an apple larger than the size being packed, and then attempting to straighten the row by using a small apple next to it.

4. Cleanliness cannot be too strongly insisted upon in every feature of box packing. Fingermarks upon boxes, or careless rubbing in of moisture and dust, are all too common. The most scrupulous attention should be given to the fruit and all specimens rejected that are not absolutely free from contamination of any sort.

5. Should there be any dust or spray material upon the apples when picked, it is much easier to take it off at that time. If the apples are allowed to stand, they acquire a certain gumminess that renders it difficult to make them look clean.

6. Packers should keep their nails well trimmed, otherwise injury is frequently caused by puncturing the fruit handled, resulting in decay. In the Western States packers are required to wear white canvas gloves.

These notes are a small part of a bulletin comprising 62 pages, with many illustrations, that is designed to profit the packer and shipper, help the dealer and please the consumer, and that can be had free for the mere act of writing to the Publications Branch, Department of Agriculture, Ottawa.

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Ayrshire Oattle

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C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
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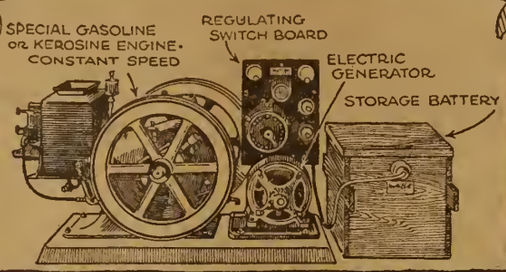

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MAKERS OF THE NATION'S TELEPHONES

MONTREAL HALIFAX OTTAWA TORONTO LONDON
WINNIPEG REGINA CALGARY VANCOUVER

The Frost "Tight Lock"

Unlike Any Other

Right at the beginning, please remember that FROST fence is unlike any other woven fence.

FROST fence is exclusive in design. Its lock is different. Its wire is different. Its galvanizing is different. The weaving of the fence is different. It's the combination of all these that makes

Frost Fence First

The Frost "Waved" Laterals

The FROST lock is unique in construction. It doesn't look like any other fence lock—and most fence locks are similar as peas in a pod.

The FROST lock will stand strains that will loosen and often pull other locks to pieces. Look at it yourself and see how much more substantial and secure the FROST lock is.

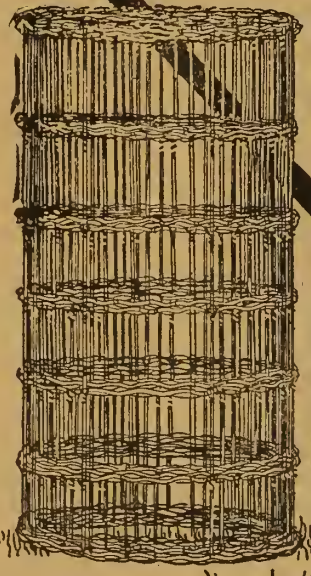
Then look at that special FROST "wave" in the laterals. This long and deep wave gives a wonderful degree of spring and reserve power to FROST fence. It puts real backbone in the fence.

The stays on the FROST fence are straight and stiff and the spacing is accurate. Our special looms weave FROST fence more slowly and consequently the fence looks neater and better in the rolls, and stretches up straight and true when putting it up. It is a fence the farmer is proud to show to his neighbors.

By making FROST fence complete in our own mills we are able to produce a fence that will outlast all others. We put the quality in the wire, in the galvanizing and in the weaving that puts FROST fence in a different class as compared with the ordinary woven fences made of common commercial wire. You can see the difference by comparing FROST fence with others.

You can prove it to the hilt by seeing FROST fences that have been defying wear and tear on Canadian farms for years. There must be some FROST fences in your locality, for we have dealers in almost every part of the wide Dominion. If you don't know the name of a nearby one, write us.

A style for every purpose.



Frost Neat Straight Rolls

Frost Steel and Wire Company, Limited

Hamilton Canada

104

Frost Straight Stays and even spacing

ECONOMY IN LEATHER

War demands leather—leather for soldiers' shoes, lather for harness, leather for equipment of many kinds. In this country there is no such surplus that we can afford to waste any of it; and it is wasting leather not to care for and preserve it properly. In the army and out, we all wear shoes. If we manage them rightly, they will last longer, we will not need so many new ones, and there will be more left for others. The following suggestions from the Leather and Paper Laboratory of the United States Department of Agriculture can be utilized by everyone who walks.

To Save Shoes

Shoes should be oiled or greased whenever the leather begins to get hard or dry. They should be brushed thoroughly, and then all the dirt and mud that remains washed off with warm water, the excess water being taken off with a dry cloth. While the shoes are still wet and warm, apply the oil or grease with a swab of wool or flannel. It is best to have the oil or grease about as warm as the hand can bear, and it should be rubbed well into the leather, preferably with the palm. If necessary, the oil can be applied to dry leather, but it penetrates better when the latter is wet. After treatment, the shoes should be left to dry in a place that is warm, not hot.

Castor oil is satisfactory for shoes that are to be polished; for plainer footgear, neat's foot, fish oil, or oleine may be substituted. If it is desired to make the shoes and boots more waterproof, beef tallow may be added to any of these substances at the rate of half a pound of tallow to a pint of oil. The edge of the sole and the welt should be greased thoroughly. Toc much grease cannot be applid to tnese parts.

A simple method of making the soles more durable, pliable, and water resistant is to swab them occasionally with linseed oil, setting them aside to dry overnight.

Many of the common shoe polishes are harmful to leather. All those which contain sulphuric, hydrochloric, or oxalic acids, turpentine, benzine, or other volatile solvents, have a tendency to hardn the leather and make it more liable to crack.

It is poor economy, too, to wear a shoe with the heel badly worn on one side. This throws the shoe out of shape and may soon result in its ruin. It is also likely to cause temporary injury to the foot.

To Preserve Harness

Harness leather, like shoes, cannot be neglected without injury that lessens its durability. It should be washed and oiled frequently. The washing should be done in tepid water with a neutral soap and a sponge or stiff brush. After rinsing in clean tepid water, then harness is hung up to drain a little while before oiling.

For driving harness, neat's-foot of castor oil is best, but for heavy harness there may be some tallow in the oil. The applications should be light for driving and liberal for heavy harness. The oil, warm to the hand, is rubbed thoroughly into the leather while it is still wet from the washing. Excess oil which the leather is unable to take up should be removed with a clean, dry cloth.

SWAT THE FLY BEFORE IT IS BORN

The most important thing to control the fly nuisance is to swat the fly before it is born. Clean the stables and yards and keep the garbage cans covered. The following are very convenient and effective fly poisons:

Bicromte of potash, one dram in 2 ounces of water. Add a little sugar. This mixtue is not dangerous to human life.

One teaspoonful of formalin in ¼ pint of water. This must be kept away from children and house pets.

To quickly clear a room where there are many flies, burn pyrthrum powder and sweep up the flies.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

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Thorough Tillage for Greater Production

Tillage, or stirring of the soil, is one of the simplest and commonest of farm operations. Possibly that is why it is so little understood. No one knows just when man began to assist nature by the use of tools to improve the soil. We know, however, that the early implements used for the purpose were crude and that the soil was little more than scratched by their use. The first real impetus given modern tillage had its orogin with Jethro Tull who, in 1733, in his book, "New Horse Hoe ing Husbandry," set forth his ideas regarding the value of simple tillage for the purpose of 'fining' the land. Tull and his disciples believed that plants absorbed the fine particles of earth by means of their roots, and that the finer the soil was pulverized the greater the ease with which the plants could feed and thus grow larger and more productive.

Many farmers know that a well-till ed field will produce a larger crop than one poorly tilled, but cannot tell why. It is now known by those who have given attention to and studied the subject that plants do not absorb the earthy particles, but use only the soluble substances such as are dissolved by the water in the soil. Hence, we stir the land to assist the soil water and air to more readily do their work.

The Seed Bed.—The primary object of stirring tbe soil is to prepare it to receive the seed. In the wild, seeds fall on untilled land, and Nature is satisfied if one seed in a thousand which she periodically sows brings forth fruit. Man requires a larger increase. He can secure it by placing the seed in tilled land and making the condition of the soil bavoroble for the germination of the seeds and the growth of the plants.

Seeds require heat and moisture for germination. The sun and air supply the warmth. The moisture comes from the soil. A small seed sown among the coarse lumps of a poorly tilled field cannot obtain the necessary moisture. The soil should be fine enough to pack closely around the seed and touch it on all sides. This contact will moisten the seed, and assist and hasten germination. Cultivation of a crop after it is sown can never fully make up for lack of it previous to sowing. Farmers, too often, content themselves with ploughing and then harrowing the soil once or twice before seeding, when three or four harrowings and once or twice over with the roller or clod crusher would have paid. The number of times which it will pay to harrow will depend upon the texture of the soil; a sandy loam will not require as much work to prepare it properly for the seed as a clay loam. Get the soil into a good state of tilth, and a better harvest will be the reward.

Tillage Increases Available Plant Food.—The tiny rootlets of a young plant aro delicate and must quickly find noourishment. They will be better able to reach out and secure food in a well pulverized soil. The tillage necessary to fine the soil admits air, promotes weathering, hastens the chemical changes which make available the elements of fertility, and encourages the development and activities of the beneficial bacteria in the soil.

Conservation of Moistrue.—Crops that can be tilled during their period of growth should receive special attention, for they are usually those which reuqire much moisture. Corn and roots are in this class. The surface of the soil should be kept loose and no moisture-losing crust alloweed to form. The surface or dust mulch prevents soil moisture from being lost by keeping it from coming into contact with the moving air, just as a blanket placed over a heap of moist earth would help to keep it moist. Tillage does its work in many other ways, but perhaps enough has been said to give a fair idea of its objects and principles.

The Plough.—Aside from crumbling the soil, the chief objects of ploughing are to destroy wild plants so that cultivated ones may take their place; and to bury trash, manure, stubble and potato vines. A plough that does not accomplish these things is faulty. All refuse should be completely covered so that it will not be brought to the surface by the harrow. To bury weeds clover or other tall green manure crops, a chain should be used, one end attached to the plough beam, the other to the double tree thus allowing the loop to pull the tall palnts down into the furrow to be covered. The jointer or skim-coulter is little used in the Maritime Provinces. Many farmers do not even know what it is. When manure, stubble or grass is to be turned under, it is a very useful attachment. It skims a shallow furrow slice and deposits it in the bottom of the furrow where it is covered by the main furrow slice and will rot more readily. When stubble or grass is ploughed without a jointer, there is likely to be a line of it between the furrows which interfere with the harrow or begins to grow and cause trouble. This is a common sight in the Maritime Provinces, but could, and should be over come by the use of the jointer. The implement dealers could perform a distinct service to agriculture by encouraging the general use of jointers on ploughs. There should be one on every farm.

It is well to have various types of ploughs for the various kinds of land to be ploughed. This costs more, but greater efficiency results. A sod plough will not do good work in soft stubble, nor will a stubble plough perform well in a stiff sod.

Depth to Plough.—The depth to plough depends on conditions. As a rule, the heavier the soil the deeper it should be ploughed, and generally, fall ploughing should be deeper than spring ploughing. Most field crops feed more deeply than is commonly realized. Therefore, the deeper the soil is ploughed, within certain limits, the greater will be the feeding ground provided for the roots. There has been a tendency in some quarters during recent years towards shallow ploughing. It is desirable under certain conditions, but should not be carried too far, or bad results will follow. The depth of ploughing is a question which every farmer must study for himself. If he wonders what would result from shallower or deeper ploughing than he commonly practices let him plow one ridge shallower, or deeper, and carefully observe the effect on the crop. In this he must not be influenced by the result of one year's trial; the experiment should be repeated year after year and on various types of soil on his farm, always taking into consideration seasonal conditions.

The Disc Harrow.—One of the best tillage tools yet devised is the disc harrow. tI is especially useful in pulverizing the soil in the spring after fall ploughing. To put a piece of fall ploughing in best shape by the use of the single disc it should be 'lapped half.' The tendem disc, one in-throw and one out-throw, which is now coming into more general use, is an excellent tool and performs the work of two single discs and does it better providing plenty of horse-power is available. One man handles it where two would be required if two single discs were used, and important consideration when labor is scarce.

Smoothing Harrows.—When the soil has been pulverided with the disc and it is desired to leave it smooth, or when mellow soil has just been ploughed, the smoothing or spike harrow may be advantageously employed on account of its lighter draught and the wider area covered. It is also a very efficient weed killer when used on corn and potatoes after they have been planted. It may be used before and after the plants come up. If corn is to be harrowed, it should be planted slightiy thicker than usual; and, if planted in drills, it should be harrowed crosswise of the rows. If potatoes are planted shallow, they are likely to be pulled out of the rows. Judgment must be exercised in harrowing crops after they are planted or sown. A light harrowing of grain crops after they are three or four inches high is often beneficial. This canot be done, however, if the crop has been seeded with clover and grasses. A light harrow should always be used on crops. The light tilting harrow is particularly suitable for this purpose as it can be set with teeth sloping backwards so as do little injury. Weeds are most easily killed when they are very small or have just germinated, hence harrowing and early and close cultivation are necessary if the fields are to be kept scrupulously clean.

The Roller.—The roller is useful to crush clods and to compress the furrow slice after ploughing sod. When manure or green crops have been ploughed under, a roller is needed to compress the soil and eliminate the air spaces under the furrow slice, which would have a tendency to dry out the top soil. The roller is sometimes used after the drill to make the soil smooth. This is not a good practice, as an unnecessary loss of soil moisture is likely to occur. The roller should be followed by the smoothing harrow to leave a surface mulch. A light roller may be used to advantage at times on a drilled field two or three weeks after the drilling to break the crust which may have formed and to level the ridges left by the drill. The rolling of heavy coils when they are wet should be avoided. The soil may be too closely packed and the air excluded, which would interfere with germination.

After-Harvest Summer Cultivation—By this is meant the ploughing and cultivating of land immediatetly after the crop has been taken off or after it has been pastured up to the middle of summer. The usual method is to skim plough very shallow, roll and disc, or otherwise cultivate in the expectation of ploughing again two or three inches deeper in the fall. This has been found to be useful in the suppression of weeds, in the conservation of moisture and in the increasing of crop yields. When a field has become badly infested with weeds, the shallow ploughing and packing in the warm weather rots the sod and the subsequent tilling causes the seeds in the soil to germinate and also kills the young plants. Moisture is retained under the surface mulch formed, which helps to rot the sod and other litter. When the fall ploughing is done, this surface soil and rotted sod is placed where the roots of the next crop can best make use of it and the two or three inches of soil turned up by the deeper ploughing makes an excellent seed bed. Actual tests have shown that good profits have been made in cleaning land and in increased yields, even when allowance has been made for the extra labor. Less time is required in the spring to fit the land for crop on a field so treated.

Drainage.—Many suppose that land drainage is concerned only with carrying off excess water from very wet soils, but it does more than this. It improves soils that are shallow or in poor texture, or slightly wet. By carrying away excess water, it permits of earlier work on the land in springtime. By lowering the water-table, the air and rainwater penetrate to a greater depth, thus making a shallow soil deeper and affording a larger feeding ground for the roots of plants. The texture is improved by the weathering and the chemical and bacterial action consequent upon the admission of the air and rainwater. A drained soil will hold moisture better and withstand drought much better than undrained soil, because the roots have penetrated more deeply and can draw upon the supply below the surface. Very little of the land in the Maritime Provinces is under-drained. Much of it would be vastly improved thereby. Dig a few holes and study the sub-soil. If drainage is decided upon, be sure that a suitable outlet is available. Complete information regarding drainage may be secured upon application to your local Department of Agriculture.

Feed Situation in 1918 Will be Acute

Agricultural Societies Desiring Mill Feeds in Car Lots Should Get Busy and Prepare Orders at Once

The Maritime Farmer recently sent a representative to Ontario and Quebec to investigate the feed situation for 1918. The outlook is not at all promising. In the first place there will be a big reduction of bran and middlings consequent to the new flour regulations which compel millers to use a higher percentage of wheat in the production of flour. Then there is a regulation which provides that all feeds ground west of the Great Lakes shall be sold in the prairie provinces. The result is that much feed which formerly came to the Maritime Provinces is being fed in Manitoba, Saskatchewan and Alberta. Besides shortage of feeds there has been a marked falling off in the supply of corn. This is largely accounted for by the lack of cars to handle the big United States crop of 1917. However, considerable corn is now moving on the rails and this will be used in the manufacture of standard feed to be made up in the mill feeds, corn, oil cake and other ingrefients.

The Maritime Farmer representative visited mills at Chatham, London, Peterborough, Toronto and Montreal and found them all over-sold and farmers vainly endeavoring to get small uantities of feed. Farmers drove miles to get three or four bags of mill feeds and seemed to be satisfied if they could only get sufficient to keep the stock decently fed.

The Maritime Farmer arranged with two of the largest mills in Canada to take any surplus bran or middlings that might be available. This feed will be supplied through Agricultural Societies at cost. The prices will be fixed by the Food Controller but to ensure delivery it is necessary that the orders be placed not later than June 15th, and earlier than that if possible. The early bird will get the feed worm in 1918.

Bran and middlings in the barns and store houses will be worth their weight in gold next fall. The Maritime Farmer desires to assist farmers in getting their stock but the outlook for 1918 is far more serious than that of 1917 and farmers who have been trying to buy feeds will realize what that means. In many sections of the Maritime Provinces co-operative buying saved farmers as much as $250 a car. The Maritime Farmer is giving this feed service to Agricultural Societies, the members of which are subscribers to the Maritime Farmer.

If you are interested in the proposition write the Maritime Farmer at once. Do not delay until next fall.

It is only fair that farmers buying feeds in car lots should also buy their flour from mills that supply them at wholesale prices. It is absolutely unfair to expect the mills to supply straight feeds and then give orders for flour to mills which refuse to deal at all with the farmers direct.

If you are wise you will not lose a minute in having your Society line up and gets its feed orders ready for 1918.

The Maritime Farmer can supply order forms suitable for getting orders at 65 cents a hundred.

The Dawn of a New Era in N. B. Cheese Making

On Friday, April 5th, a meeting was held in the Agricultural School, Sussex that omens well for the future of the cheese making industry in New Brunswick. The meeting was in the nature of a get-to-gether conference of milk producers, cheese factory directors, cheese makers, brokers, cheese buyers and sellers and experts who know what is what in cheese making.

It is a well known fact that cheese making has not reached the stage of perfection in New Brunswick that has been obtained in other provinces, and consequently the home demand for this excellent food commodity has been filled in the main from outside sources.

H. N. Flewelling, B. S. A., presided. Among those present were W.R. Reek, Deputy Minister of Agriculture; Geo. Barr, of the Dairy Division, Ottawa; H. W. Coleman, the new Dairy Superintendent for the province; Harvey Mitchell, one of the foremost cheese experts in Canada; G. B. Pippey of the Nova Scotia Dairy Division; R. B. Colwell, Cheese Broker of Halifax, N. S.; C. W. DeForest, T. B. Schofield, D. W. Puddington, A. C. Cross and J. A. Gundy, St. John; and H. W. Robertson, Moncton.

Some good cheese has been made in New Brunswick, several factories have a reputation for making a first class product, other factories have not such an enviable reputation. Too often the good product of the more careful factories has to bear the drag of the stigma and unenviable reputation of the careless.

The outcome of the recent meeting will be that merit will be recognized where merit is due. The careful makers will be able to dispose of their product at the highest ruling prices and the careless will find it increasingly difficult to find a market that will take their goods at any price. The chees edealers of the Maritime Provinces are ready and willing to give the Maritime made cheese the preference providing the quality is all right.

There was no shielding or glossing over of conditions as they exist. We heard a cheese broker say last summer to a group of cheese makers. "I will give you several cents per pound more for your cheese than you are now getting if you put up as good a quality as they do at P————, and I will guarantee you a steady market."

Several factories resolved to aim for a higher standard in their products and the result was quite noticeable. They made a start on the right road and they are determined to continue in the path of improvement.

The first speaker was Mr. Barr, who is one of the foremost cheese experts in Canada. Last summer he visited a number of factories in this province and found that steps should be taken at once to improve the grade of cheese made. In the course of his address he used four cheese for demonstration purposes; one to represent the imported product from Ontario; one to represent what was done in some of the factories in New Brunswick last summer through a little special effort; and the others to represent the result of carlessness and inefficiency or lack of knowledge of the consequences of improper handling of a product that is highly perishable when not properly made.

The cheese before the meeting were cut and sampled by those present with the result that everyone admitted that the Ontario cheese was quite superior. The other two were cut but sampling was declined be cause they were unfit for human consumption, and it was clearly explained that there was no just cause why every cheese should not be equal to the Ontario cheese shown.

The loss in profit to the producer was easily seen, and at this time the loss in food made it appear criminal. Mr. Barr pointed out that it was a severe handicap to retailers when endeavoring to cut the inferior article, as consumers would discriminate very decidedly, first because of appearance, and secondly because of flavor.

Letters were read from firms who found it impossible to be represented at the meeting, stating that the quality of the New Brunswick cheese had gone so low that they would be forced to refuse them, even though it would cost three or four cents a pound more to import the cheese from Ontario. Thus the New Brunswick farmer was losing a fair profit by following the present methods.

Harvey Mitchell, of the Dominion Dairy Division, pointed out that the best New Brunswick cheese exhibited at the meeting was made in a factory last year where an effort had been made to produce a better article which resulted in the satisfaction of the producer and the consumers. He alos explained, spported by the makers present, that every competent maker was aware, that when the cheese was a day or two old, it would show signs whether or not it waas superior or inferior.

The delegation of the merchants present were unanimous in the point that they were finding it more and more difficult to dispose of cheese made in this province because of its lack of quality and uniformity.

Several stated distinctly that they did not intend to handle and further quantities unless suitable supervision would be given to guarantee a standard product.

It has been suggested that in the proper carrying out of th eproper propaganda, that a cheese board should be established in order that satisfaction might be given to all concerned.

It is hoped that as a result of the bringing to gether of these varied interests that the New Brunswick cheese will before long compare very favorably with the best cheese made in Canada, and that the New Brunswick consumers will have the satisfaction of spending their money in their own province, knowing that they are securing an article equal in value to that which is today being imported; and as a result every producer will also know that under the gradual improvement which should take place he will receive a greater return for his labor.

The provincial department of agriculture was pledged by Mr. Reek to give the necessary technical instructions to bring about this improvement.

After considerable discussion it was decided that if the factory men were willing, a grading system be inaugurated and that all cheese would be sold upon its merits. The dealers stated that if such could be done they would purchase only graded cheese from this province, the grading to be done by the Dominion department of agriculture.

A meeting of all the factorymen will be requested and the dairy superintendent of the province will be present to discuss the situation with them.

H. W. Coleman, the new Dairy Superintendent, expressed his willingness to do all that lay in his power to assist in this movement.

The new Dairy Superintendent for the province, H. W. Coleman, of the Dominion Dairy Division, has been engaged to fill the vacancy caused by the untimely death of C. W. McDougall. Mr. Coleman comes highly recommended from the Dominion Dairy Division, with which he has been connected for the last eight years. Previous to this he was a very successful cheese maker, and is a graduate of the Guelph Dairy Svhool. He also holds an associate diploma of the GuelphAgrricuitural College. Mr. Coleman has long been known as a keen student of agriculture and also of men in general, and it is anticipated that under his direction the dairy industry of this province should be greatly benefited.

Reduce Cost and Increase Production on Farms by Use of Modern Appliances

The addresses delivered at the recent Farmers' and Dairymen's Asoiciation by W. R. Reek, Secretary for Agriculture and Prof. Grisdale, Director of Experimental Farms, urged the necessity of using more power and larger machines to cope with the shortage of man power on the farm.

At the present season there seems to be no other way of reducing the cost of production on the farm, than by bringing the man power up to the highest point of usefulness in adopting the most efficient tools, implements, machinery, devices, &c., and operating them as far as possible, by wind, gasoline, steam or electric power. Owing to the shortage of men for farm work, production will be greatly diminished, unless one man is enabled by the use of better equipment, and the more general adoption of the above mentioned powers to accomplish very much greater results. Even some of the seemingly insignificant things about the place may be used to facilitate and render much of the work easier and more agreeable; all of which tends to accelerate matters and enlarge the total crop yield and income of the farm.

Working out this idea on a practical basis, there is no doubt that there are many farms where larger and more expeditious implements should be used. On many large farms, the need of some good economical power could be pushed to extreme length, has been felt for many years. This has apparently been supplied in the recent introduction of the Light Farm Tractor, capable of drawing a gang of plows or other expeditious implements of cultivation. This machine will not tire like the teams and can be operated twenty-four hours a day if necessary, which under certain conditions is a great advantage. In addition to its value as a field machine, it can also be used for work around the buildings, cutting ensilage, chopping grain, sawing wood or any other work requiring light or medium sized power.

Again the larger, heavier and faster horse-power machine should be more generally used than they are. One

man can drive three or four horses about as well as two, and thereby multiply the amount of work he is able to accomplish in a given time. On most hundred acre farms at least four horses are kept. Where there are two men and large implements one can use all the horses allowing the other to do the chores and other work, thus keeping all departments of the farm up to an economical working basis at the same time securing a maximum amount of work from the teams, without having a lot of drudgery to do when the day's work should be over Where there is only one man the advantage will be still greater for he can even then do the work of an ordinary day in one half and have the other half clear for other jobs. Large implements will not only be found of advantage in the spring for plowing, seeding, etc., but the same principle can be carried out largely all the way through the season, with mowers, binders, loaders, rakes and other articles. The manure spreader with three horses on it is one of the greatest labor savers of any machine on the farm. This special purpose appliance is always ready to do its full share of the farm work at a minimum of cost and as an economic source doing certain work it has no superior on the farm. In these days of strenuous exertion where everything possible should be made to increase the output of the field, no farm having any considerable quantity should be without a spreader.

The hay loader and side rake has not come into general use; but no doubt should be found on many more farms than they are. Many for some reason, are still prejudiced against them; but there are others who would not think of parting with them at double or triple their cost. That they are an economical and expeditious means of loading hay cannot be gainsaid. The trouble in most cases with the objectors is that they don't like to hustle; but with s steady team and windrows not too heavy, even these can get on a load with much less exertion than by the hand-pitching method.

Where the hay-loader is used the side rake is almost a necessity to put the windrows in good shape and also in having them follow the mower round the field, making it possible always to work the hay as it is cured. This implement can generally be used to replace the tedder in stirring and turning the hay.

Where a large acreage of corn is raised the double cultivator is a most useful implement. It will do a good job if used properly and not only cut the time of operation in two but at the same time be a much easier task for the workman; and while hand-hoeing cannot be entirely eliminated it can be very greatly reduced

In some parts of Western Ontario the farm truck, with level platform, is becoming very popular in some sections at least. This is made by putting two 3"x6" or 2"x10" sleepers on the bolsters, spiking and fastening good ends on with iron straps going around them and fastening to the sides with bolts. The platform is then made by laying inch boards crosswise and nailing them to the sleepers. A two by three inch strip running all around and bolted to the ends of the platform boards will complete the job all but ladders in front and behind which should be moveable.

Where two farm wagons are kept, and there should be where there are four horses and two men, this makes one of the handiest outfits on the farm. It can be used for drawing almost any kind of farm produce, going to mill, drawing hay, grain, ensilage, and any kind of truck without any changing. And if needed for drawing gravel or such work, the platform can be lifted off, which it will seldom need to be.

In addition to the more pretentious articles on the farm for economizing in labor, many of the so-called little things may be made to play an important part. For instance, a stone-boat can be made by any handy man in half a day for an outlay of one to three dollars that will save many a lift in hauling articles about the farm. Ploughs, harrows and other things caan be so easily loaded that the wagon will not be needed when the boat is available.

A good working outfit of carpenter's tools is indispensable for the farm. No one can afford to run off to town for every little repair that is needed to tools and other farm equipment, and if the boys are supplied with a reasonable outfit they will soon become quite proficient in their use, and not only save many a trip to town, but be able to make many articles of value for the farm equipment.

Another useful little device not commonly found on the farm is a wagon jack. This can be easily made at home some rainy day and will be found much more satisfactory than hunting around the place for an old rail to lift the whole weight by main strength.

For keeping the tools sharp and in good working order few things will be found more useful than the bicycle grindstone. With this inexpensive little implement all kinds of tools, mowing machine sections, etc., can be ground by one man and more satisfactorily than having a boy or lazy man to turn it. On a farm where much hay cutting is done all old sections should be replaced with new ones previous to starting the haying. It will only cost from one to two dollars to put all new sections on a mower knife, and it will pay big dividends if the sections are much worn. The binder is better equipped with sickle sections. Although not quite so keen as fresh-ground smooth section, on the whole it will do better work and need not be taken out of the machine from the beginning until the end of harvest.

A good horse clipper is a fine thing on the farm. It may be either a hand or a geared machine to run with a crank or electricity. When the weather turns in hot in the spring, the teams cannot do much unless their old hair is off. To remove this with the clipper is only the work of an hour or two and it will make a wonderful difference in the amount of work a team can do. Curry combs, burshes and stable fixtures will also expedite matters in caring for the horses and keeping them in good condition for their work. These should be kept in good shape and renewed at least every year, preferably in the fall when the hair gets long. The sharp teeth will be smoothed to some extent by the time the hair is off in the spring. An old rusty curry comb is little better than a chip for celaning a horse. With proper tools one can do this in ten minutes better than could otherwise be done in half an hour with poor tools.

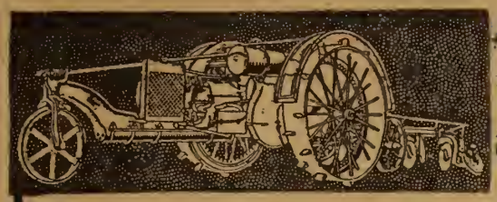
There are many other plans and devices that can be made to conserve economical ends and every farmer should keep his eyes open, and his heart ready to respond to every suggestion along this line and the possibilities of thus reducing the cost of production will increase with the passing days.

PROSPECTIVE WOOL PRICES

Beginning in the year 1914 and continuing on until the year 1917, wool prices have been advancing by leaps and bounds. Take for instance in the year 1914, wool growers received 20 cents per pound and upward, the price depending on how and when the wool was marketed. In 1915 wool marketed co-operatively by the Sussex & Studholm Agricultural Society averaged about 35 cnts per pound. In 1916 a still further advance was registered and finally in 1917 wool marketed early sold for as high as 62 cents and later on in the season reached the 72 cent mark for unwashed wool. This 72 cents for unwashed wool, based on a 25% shrinkage for washed wool, is equivalent to 96 cents for unwashed wool.

Now due to the successive increases of the last few years as outlined above, the wool growers anticipated another big increase in price this year. Undoubtedly prices would have advanced again but the United States War Purchasing Commission, to prevent speculators from cornering the available wool supply, have reserved the right to take all the wool they require at last year's prices, as quoted on the Boston market less 5%. This move on the part of the United States Government was made solely for the purpose of controlling speculators. American prices regulate Canadian prices for the simple reason that two-thirds of the wool grown in Canada is marketed in the United States because the Canadian mills have not the facilities for manufacturing all of the Canadian grades.

How will this effect the New Brunswick wool grower? It all depends on whether the United States Purchasing Commission exercise their prerogative, if so prices will remain steady and there will not be any abnormal advance over last year's prices, but immediately an attempt is made to corner the market or speculate in any way, undoubtedly the Purchasing Commission will act, and from all appearances at present it seems that there will be no material advance over last year's prices.



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APRIL 23, 1918.

DATES OF ISSUE.

May 7-28
June 11-25

MAKE YOUR WILL PROPERLY DRAWN TO AVOID TROUBLE

When a man is in good health and his life seems assured for many years to come, he is likely to think, that however much will-making considerations may apply to others, for him at least they have no attraction, and thus a matter that in nearly every case is vital to someone is thrown into the dice box, so to speak, and those to whom right, equity and justice could have been assured, are often forced to become the victims of a game of chance through no fault of their own, and no doubt through the intentions of no one else, but rather through the neglect of such business principles as would not be left for a single moment without the thought and consideration that they deserve in any other line of business conduct. Where the making of a will has been neglected, there is always added cost in the settlement of an estate through following out a course of law, and this is the least of the evil results that often occur.

The law has made certain legislation that embodies some of the features that should be in all wills; but the law or any other force can not make general rules that would be applicable in all cases. Law is therefore not always equity and cannot be, because it can only deal with general principles, which in specific cases are not just.

Any man who has the intelligence and capacity to accumulate property should be in a better position to know how, where and to whom his bequest should be made than anyone else. The injustice of "no will" is likely to fall heaviest where it can least easily be borne. With a man of large wealth it does not matter so much. The laws of the province will insure relatives quite a fair division of his estate after the legal fees are taken out. But the man who has only a modest fortune to dispose of should see that it goes into proper channels. A faithful and loving wife should in many instances have the use of all the estate during her life; in other cases there are aged parents to be provided for, and again children, brothers or sisters who need especial care. These matters can be adjusted only by the provident man who makes his will. No man has a right to presume on life. No sane man will question this fact; then why take chances in the things that cannot be remedied after this chapter is closed? The making of a will is one of these.

Farmers, perhaps, more than other classes of men, are prone to procrastinate along business lines that require a pen and ink to accomplish. The reason is not far to seek. They work on other lines largely and as a rule would rather wield the hay fork with which they are more familiar. While this is good and necessary, a change to the pen frequently enough to keep on familiar terms would serve a good and useful purpose.

Many people have the impression that a high priced lawyer is necessary to a properly made will. This is a mistake. If one can write a legible hand (and most farmers excel lawyers in this matter), knows to whom he wishes to leave his belongings, and can express his intentions in simple, direct words, he is in a position to make a will that will stand the test in any supreme court in the land. In addition to these facts, he will need only to observe a few simple rules, such as the appointment of one or more executors, to subscribe his name in the presence of two witnesses and declare it to be his will in their presence. The witnesses should be persons familiar with conditions, and the will should be placed in the care of some responsible person. The executor should not sign as witness. After the will is made and before it is signed and witnessed, the owner should read it over carefully, and if it is not according to his wishes destroy it and make another. It is better to do this than to make erasures and trust to the consequences, which are often serious.

In making a will it is always good policy to make sure that the law is not being overridden. For instance, the wife can claim certain amounts or interests in an estate and she cannot be deprived of this. Will forms can be secured from various places where they are on sale that aid greatly in the making of a will, as they are printed with headings and other matter to guide one. Forms can be procured that furnish instructions for filling in properly and such other information as will enable the accomplishment of the object in view. In addition to this the Bax will form gives a sample will made to correspond to the form, which makes it almost impossible with ordinary care to go astray. However, if a person is not sure of his ground, it will be better to pay a few dollars than run the risk of litigation.

DEBT ON FARM VERY OFTEN GOOD FOR YOUNG MAN

The farmer has no reason to feel ashamed if he happens to have a mortgage on his farm or carry a debt in some other way. If he exercised good judgment in buying the farm, he probably never did a better thing than when he gave obligations for the deferred payments. We believe that most young men make a mistake if they do not go in debt on starting in life. Nothing will so stimulate them to work hard and be economical as the consciousness of knowing that some time during the year they must meet a due note. If a young man buys a farm and has half the purchase money made to pay on it he might sell half the farm and get out of debt, but this would rarely be advisable. The farm may not be too large. He will make another mistake if in his rush to get out of debt he sacrifices fertility. In order to build the farm up he may have to spend all he makes on it for five years or more and therefore will reduce his indebtedness little, if any, but this should not discourage him. As he increases the fertility of his farm he is increasing his assets, though they may be invisible, just to that extent. A young farmer who owed a big debt on a farm recently said to the writer that he would tile drain it as soon as he got it paid for. He felt that he did not want to go in debt any more. Was this good policy? It is a very conservative estimate that tile drains laid in wet lands will pay a dividend of 50 per cent. or more. He doubtless, is not paying more than six per cent. Instead of paying off a note of $500 and thereby saving the six per cent., would it not be wise to invest that money when it will pay 50 per cent? If he did this at the end of the first year he would have made the interest ($30) on a $500-note and cleared $220 besides, and the next year the land would go on making just as large dividends. The permanent improvement made here would constitute an invisible asset but his creditors could see that he had it and he would strengthen his credit to that extent.

IMPORTANCE OF GOOD SEED

There never was a time when good seed was of such importance as today. First, it is important from the standpoint of dollars and cents caused by the scarcity and high price of labor and the real money value of the seed if used for food purposes, but away and beyond these it is important for the reason that today the gaunt spectre of almost certain famine, on a large scale, in more than one portion of the world, looms up as an ever present nightmare, and, therefore, it is not only the duty, but the privilege of each to, as far as possible, help ward off this pending calamity. We, therefore, urge, with all the power and persuasion we can command, every farmer to be exceedingly careful about the seed he uses this coming Spring.

Increased production is essential. There are a number of ways by which this can be accomplished, but by far the easiest and most profitable is by the use of strong, vigorous seed of high germinating quality. This ensures the largest possible returns with the least labor. To spend a lot of valuable time in preparing the seed bed and then to sow weak seed is, to put it mildly, a waste of energy and to state it boldly, in the light of the present day events, a crime. Weak, frosted seed has real food value, so should be used for that purpose, and not scattered on the land when it will blight your hops, as all it can do is make spindly growth if it has some vitality, and rot without sending forth a blade or root if badly frosted.

* * *

Convenient and efficient systems of watering the cattle, either in the stables or yards save much unpleasant labor and help to keep the cows up to maximum production. Individual watering basins by the side of each cow are a good thing, but they should not be used as an excuse for keeping the cows inside all the time, as they need daily exercise in the yard. It is better to water the cows in the barn in the winter and turn them out for daily exercise. When a cow is kept in a warm barn for twenty-four hours and then turned into the yard to drink from the water-trough, her system requiring a good deal of water, she is apt to drink so much cold water that it will cause a chill that will prove injurious in its effects.

* * *

Preparedness! means that every farm implement and machine be in good working order when the time ocmes to put in the big war crops.

* * *

"He that wasteth today will be hungry tomorrow."

The man who grows more food adds to the wealth of the world; the man who grows dollars may be adding only to his own wealth.

RATS AND MICE

Destroyers of Grain and Food

The brown rat is the worst pest with which man is afflicted. Both this rat and the house mouse came to North America from abroad; possessing habits adaptable to almost any kind of environment, and feeding upon all kinds of animal and vegetable matter they have increased and spread over a vast area. In Canada they have not yet spread over the greater portion of the prairie provinces, but in their gradual migration from the east they have now spread over southern Manitoba, and as the west becomes more settled their destructive hordes will certainly extend further afield, menacing especially the grain interests.

Destruction of Food.—Their destructive powers are well known. No kind of grain is spared, whether growing or stacked in the field, stored in the granary or elevator, transported by rail or water; everywhere they take an enormous toll of this chief source of our food supplies, the conservation of which is a paramount necessity at the present time. Never have the destructive powers of mice been so strikingly demonstratetd as in Australia during 1917. Owing to the lack of transportation, vast quantities of grain destined for export have accumulated in New South Wales and Victoria. A plague of mice developed, and the destruction of grain has been enormous. We are informed that in some places the ravages of the mice were so great that huge stacks of grain were reduced to what resembled mere heaps of debris in a few months. The Wheat Board of New South Wales organized a campaign of destruction; in one place the catch for two nights totalled seven tons of mice. While this outbreak was exceptioial it serves to show the destructive powers of these small creatures, in the mass.

The brown rat invades houses, stores, warehouses, and markets, and besides destroying fabrics of all kinds and leather goods, it attacks all kinds of food: meats, groceries, fruits, vegetables. In town and country it attacks poultry, destroying eggs and chickens The foundations of buildings are damaged by their activities, and everywhere they destroy unceasingly, and yet we tolerate their presence.

In Europe it was estimated, after a full enquiry in 1907, that the average annual loss caused by each rat in Great Britain equalled $1.80, in France $1, and in Denmark $1.20. The losses in rural districts in Great Britain and Ireland in the same year were computed to be seventy-three million dollars, and a capital of about ten million dollars was employed in the industry of supplying means for their destruction. In 1904 the losses in France were computed at forty million dollars. At the present time the English Board of Agriculture is making special efforts to combat the rat pest in England as a means of saving food supplies, and the Sanitary League in France is also carrying on a vigorous campaign against rats.

Recently, Mr. E. W. Nelson, Chief of the Biological Survey of the United States Department of Agriculture, has estimated that the annual losses in the United States due to rats equal at least 200 million dollars. He also states that in order to feed and otherwis provide for this enormous destructive army of rats, the labor of 200,000 men is required annually.

Menace to Health.—Besides the enormous destruction of food supplies, the brown rat is a serious menace to public health. It is carrier of bubonic plague, one of the most devastating of human diseases, which has been carried by the rat all over the world. In the fourteenth century it is estimated that about twenty-five million people died in Europe from the "Black Death" as this disease was called, and 2,000,000 deaths are stated to have occurred during the epedemic of the plague in India in 1907. Bubonic plague is transmitted from rats to human beings by fleas, and modern methods of preventing the spread of plague involve the most vigorous eradication of rats, and the prevention of their landing in seaports from ocean-going vessels by which they are transported.

Investigations into the recent outbreak of infantile paralysis (Polimyelitis), which was especially prevalent in the Eastern United States, have indicated that the rat may be an important factor in the spread of this disease.

Prolific Habits.—The serious nature of the rat menace is more keenly appreciated when their prolific habits are realized. The brown rat begins to breed when it is about three or four months old; they breed from six to ten times a year, and procuce, on the average, ten young in a litter. If we imagine a pair of rats breeding at this rate uninterruptedly for three years without any deaths to their progency, at the end of that period the number would have increased from two to over 350 million rats.

Mice produce fewer young in a litter but they bring forth their families with astonishing rapidity.

How to Protect Grain, and other Stored Products from Rats and Mice

The main reason for the abundance and destructiveness of rats is that we provide ample food and shelter for them. To combat these pests successfully we must deny them these essentials. We must starve them out and build them out.

They should be denied access to places where they obtain food and rear their young. To accomplish this, buildings should be made rat-proof; and the best method of construction for this purpose iis concrete. In the construction and maintenance of buildings in which food is kept and rats are likely to find lodgment, special attention should be paid to the closing of all apertures, especially in foundations where drain and other pipes enter. Doors to such buildings should be bound with strong sheet metal. Constant viligance should be exercised with a view to checking any inroads of these pests; the holes of rats or mice can be readily stopped by a little concrete or broken glass or crockery. Cement should be used for foudnations of all kinds of storehouses, granaries, poultry houses. Corn cribs can be rendered ratproof by inclosing them in heavy galvanized wire nettting of half inch mesh. Storerooms should always be made ratproof by the adoption of the foregoing constructional methods.

So long as old buildings and storerooms are maintained in a state of disrepair, rats and mice will flourish and destroy their contents. It is not only in the interests of private economy, but as a national service, that owners of such rat-infested buildings should take immediate steps to "build out" the rats and save food supplies. Everywhere destructoin is proceeding, and everywhere there is a greater need than ever at the present time for the saving of every bushel of grain and every pound of food.

Civic authorities, and particularly the health authorities, sould adopt and enforce sanitary conditions in towns and cities. Cleanliness and the prevention of the accumulation of refuse and garbage are essential in the eradication of rats. The maintenance of garbage dumps is one of the greatest contributing causes to the abundance of rats. From all points of view the immediate incineration of garbage is the only proper treatment and method of preventing the increase of rats and the breeding of flies, those unsurpassed agents in the spread of infection.

How to Destroy Rats and Mice

Trapping.—On of the most effective methods of destroying these pests is trapping. The best traps are those of the spring or guillotine type. Such traps may be baited with any of the baits preferred by thsee animals, such as meat, oatmeal, cooked eggs or fruit. It is necessary to use a large number of traps, the more the better. The wire cage traps are excellent when rats are abundant.

Poisoning—Where there is no danger of food becoming contaminated, or of fur animals eating the bait, the bait other animals eating the bait, poisoning is a speedy method of destruction. But naturally the greatest care must be exercised in the use of poison. In destroying rats and mice in houses it is inadvisable to use poison, not only on acocunt of its danger, but the occurence of the inaccessible corpses of these animals is likely to prove objectionable. Barium carbonate is a cheap tasteless, and odorless poison. It may be mixed in dough or composed of four parts of meal or flour and one part of the poison, or a stiff dough of eight parts of oatmeal and one of poison. The poisoned dough should be placed in the runways of the animals. Strychnine is a well- known and rapid poison, usually used in the form of strycnine sulphate. The dry crystals of this chemical are inserted in baits, such as meat or cheese. With oatmeal or grain, such as wheat or corn, it is used in the form of a syrup which is made by dissolving half an ounce of strrychnia sulphate in a pint of boiling water; a pint of thick syrup is added, and the whole mixture is stirred thoroughly. Oatmeal should be moistened with the syrup, and grain should be soaked over night. Arsenic is used in most rat poisons. It may be fed in the form of powdered white arsenic, used as described above. A good bait is prepared by thoroughly mixing a pound of oatmeal, a pound of coarse brown sugar, and a spoonful of arsenic. This is placed in the runs of the animals. Phosphorus is a common ingredient of rat and other animal poisons, but owing to the danger involved in mixing it and in the subsequent use of the home-made or commercial preparations on account of its very great inflammability, its use as a rodent poison is not recommended.

The value of domestic and wild animals as rat destroyers.—The great value of small terriers as rat-catchers is too well known to need emphasis. They are often used in conjunction with ferrets, the latter animals being employed to drive the rats from their runways. But ferrets should always be muzzzled when hunting.

While weasels are regarded as "vermin" and enemies of chickens and young game birds, there is no doubt that as rat destroyers they have few superiors. When they can secure rats they will usually leave the chickens unmolested.

Among the active natural enemies of rats and mice around farm buildings, snakes occupy an important place, and this fact should be realized. Only one species of Canadian snake—the rattlesnake—is poisonous; our other native snakes are not only harmless but are useful as destroyers of rats, mice, and other pests, and they should therefore be protected.

In country districts, farmers should protect owls, the greatest of mice destroyers; and many of the hawks are valuable as destroyers of noxious rodents. The continued destruction of these natural enemies of rats, gophers and mice has been largely responsible for the increase in the numbers of the these food-destroying rodents, and it is important that the valuable services of these birds should be recognized.

Organized Destruction.—In England excellent results have been obtained by the co-operative eforts of farmers and others in the destruction of rats, and such organized destruction is essential if results of real value are to be obtained. The offer of prizes and bounties by local authorities has been found to stimulate effort. In many cities and towns the local authorities and organizations have promoted rat destruction, and it has been successfully stimulated by educational work.

We would urge the various organizations in cities and towns, and farmers' and women's institutes in rural districts to undertake educational work with a view to arousing public opinion as to the serious losses caused by these pests, and to promoting campaigns for their destruction.

Rats and mice are destroying millions of dollars' worth of food in Canada at the present time, when the conservation of food is a duty that devolves upon every one. The more food we permit the rats to destroy the less there is for us and our kinsfolk across the sea to eat. Never was the need of saving food supplies a greater necessity; never was the need of the most relentless campaign against these food destroyers. Eradicative measures should be prosecuted with the greatest vigor wherever these pests occur, whether on the farm or in the city.

THE FARM THE BEST TRAINING GROUND

(By J. S. Meagher)

A remarkable fact, and one that is not generally known, is that 75 per cent. of our public men were born on the farm. As a training ground for any profession or business the farm is the best starting point; in the first place the farm boy is removed from the oft times unhealthy atmosphere of the city, where bad companions often stamp into his character the germs of wickedness and thereby ruin perhaps a great career.

The city boy is usually supplied with so many diversions which, though harmless in themselves, are often the means of instilling a love for frivolity that detract seriously from the study of more useful occupations. On the farm, as nowhere else, is the rule instilled into the youngsters that punctuality is the essence of business, for on the farm if the hundred and one little things that go to make the sum total of the agriculturalists' calling are not done at the right time, then everything is in chaos; no, I have never yet met the farmer, either young or old, that was not right on time. Early rising is another asset that stands the farmer in good stead if he takes up another occupation. The farmer usually beats the sun by quite a bit.

Although it is very true that the muscle plays a big part in marring or making the farmer, it must be admitted that farmers as a class are a very commonsense lot. Trust them not to do anything rash or foolish, on the impulse of the moment; they will always take their time and study the pros and cons thoroughly before acting, once decided they'll carry their idea through to the end.

The farmer is described as an honest man, and that he really is. Untrammelled by the environment of city influences, he forms a code of morals that are simple and straightforward.

Men who are in authority now and were born and raised on a farm are, without exception, remarked for their clear and unbiased judgment in eve the most intricate public affairs.

Another great asset that stands the farmer in good stead if he leaves the farm is religion.

The man born on the land is nearly always a good Christian, thanks to the efforts of a good Christian mother. The farmer is not exposed to the temptations of every fancy religion or cult that so ften spring up in cities. Although it is true that the youngster on the farm has not the oportunity to attend high school or even night class, nevertlieless, the present system of rural schools is well orgonized to give the boys or girls a good foundation in the three R's; this in itself, coupled with deterimnation to succeed will get them anywhere, as witness the example of hundreds of our public men who started with the most elementary education but more than made up for this drawback by bringing into play the qualities they acquired on the farm. The outlook for the farmers is bright indeed. Already three great farmers' concerns have merged together forming the most powerful organifiation of its kind in the world today, and directed by some of the shrewdest men in the country, and all of them farmers, born and bred.

HORTICULTURE

OTTAWA FRUIT CONFERENCE AND N. S. FRUIT GROWERS

Port Williams, N. S.
The Editor, Maritime Farmer,
Sussex. N. B.

Dear Editor:—

As the Maritime Farmer is the official organ of the N. S. Fruit Growers Association I would like to make a report through your columns for the Nova Scotia delegates, of their work at the Fruit Conference held at Ottawa March 26th and 27th, and the resolutions passed at that meeting. There were in attendance only twenty official delegates from the whole Dominion. Four from B. C., six from Ontario, two from Quebec, one each from N. B. and P. E. Island, four from N. S., and at the special request of the Minister of Agriculture two were appointed to represent the buying interests of the Prairie Provinces. We had no knowledge of this Conference being called at the time of our annual meeting in January and our executive was asked to send representatives only two or three weeks before the date set for the Convention. Those appointed for Nova Scotia were, F. W. Bishop, Pres. of the United Fruit Companies; A. S. Banks, of the Cornwallis Fruit Company; and F. H. Johnson and Manning Ells, Pres. and Sect'y respectively of the Fruit Growers Association. Mr. A. E. MacMahon of the United Fruit Companies, was also present the first day of the Conference.

The Resolutions passed as given below pretty well explain themselves. The question of one uniform barrel for Canada has been a matter of debate and resolutions for at least twenty-five years, and it seemed as if we had come to a deadlock. A matter of compromise was never suggested before, but when the United States decided on a one sized apple barrel for their whole country, and some States especially either ruled our small barrel out altogether or allowed it to be sold under such restrictions as to very much discourage shipments, it looked as if we had everything to gain and nothing to lose in joining with Ontario in asking for a standard barrel for Canada in conformity with the one adopted for the United States.

If the recommendations of the Conference in regard to the barrel go throug, Nova Scotia apples will no longer be discriminated against in Liverpool and Glasgow on account of the size of the package as was the case in the past. If we have a large crop this fall we can use the new barrel to ship to the United States markets, and it may mean the difference between disaster to our fruit interests and a fair return.

Personally I believe the proposed amendments to the fruit marks Act will be the greatest step in advance for our fruit industry since the Act was pased some ten or twelve years ago.

The definition for the No. 2 has been brought up only to the standard as set for the past eight years by the most of the Fruit Companies, and all the most reputable packers in the Valley. It simply means that a No. 2 must be nearly as good as No. 1 in quality, but a grade lower in size. The Domestic Grade came to the front because it filled a place completely no other grade seemed quite fitted for. All the Conference did was to give it a name and take off the objectionable No. 3. So we will not have the confusion of quoting Co-operative No. 3, Extra No. 3, No. 3 Special, No. 3 Large and labelled No. 3 that all meant the same thing and yet did not mean anything that the buyer could be sure of. It will be noticed that the Domestic grade takes in No. 1 and 2 in size, leaving all below that size and exclusive of culles to be marketed under the grade of No. 3. As the definition of culls in the Act is now rather vague, the Department was asked to see that this was amended when the other changes were made. The majority of the delegates outside of those from the Maritime Provinces were opposed to having the No. 3 defined, wishing it to be simply marked and sold as ungraded or unclassified. We from Nova Scotia felt that we could speak with authority in the matter as we have sold No. 3's ungraded too long now for the good of the fruit growing industry After considerable discussion Ontario was willing to vote with us but B. C. contended that the Domestic Grade wass really a No. 3 and that this lower grade if defined at all should be marked No. 4. The Resolution as passed was finaly put through and on the second vote was unanimous.

The resolution on other packages, as plum and peach baskets and crates are not of much interest to our growers. The idea for one standard and uniform package for each class of fruit was adhered to right through the Convention.. The four-fifths strawberry box as used in N. S. was decided on as well as the two-fifth size and the full Imperial pint size that is used in B. C. Notice the pint in a square box, not flaring like the four-fifths.

The growers names and addresses will be required on all strawberry crates as well as on other open packages and Fruit Inspectors will be empewered to examine open packages at point of shipment and see that such are properly filled.

The following are the resolutions passed of particular interest to Maritime Province fruit growers, and the Fruit Commissioner expects that legislation in conformity with these recommendations will be placed on the statute books at the present session of Parliament.

Yours respectfully,
MANNING ELLS.

Resolutions passed at the Dominion Fruit Conference, Ottawa, March 26th and 27th, 1918.

1. That the United States standard apple barrel be adopted for Canada. Dimensions: 171/8" head diameter, 28½" stave, 26" distance between heads, 64" circumference at bulge, 7056" cubic inches content.

Further suggested that present manufactured stock may be used during the season 1918-19 but that after June 1st, 1918, all staves cut for apple barrels will be of the above dimensions.

2. That the American or Washington apple box, measuring 10½ x 11½ x 18 inches, inside measurement, be adopted as the standard for Canada and for exporting to such countries as have no legal requirements of their own; and that exporting to such countries as have legal requirements permission be given to export in the box required by the country to which they are being exported.

7. That three sizes of berry hallocks be made legal in Canada, namely, the standard four-fifths quart, the standard two-fifths quart and the Imperial pint measuring 4⅜" at top and bottom, and 1 2/8" deep.

15. That the following amendments be made to the Inspection and Sale Act, part IX.:

(a) Fancy frade eliminated.

(b) No. 2 to be defined "unless such fruit includes no culls, sound, of nearly medium size and some color for the variety and not less than 85 per cent. free from scab, wormholes, bruises and other defects and propelry packed"

(c' That a "Domestic Grade" be embodied in the Act and defined as follows: "unless such fruit includes no culls, sound and of not less than nearly medium size for the variety, 80 per cent. free from worm holes, but may be slightly affected with scab and other defects, and properly packed."

(d) That Grade No. 3 be defined to include no culls and be properly packed; and that the definition of the word "culls" be left in the hands of the Department of Agriculture.

16. That all packages of frpit offered for sale shall be well and properly filled at point of shipment and in cases

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here inspectors find evidence or unerfilling, they shall have the right to reigh or measure contents of package t point of shipment, in order to determine whether said package had een well and properly filled.

13. That when Inspectors find fruit alsely marked at shipping point, they hall have the power to compel the emoval of the original grade mark, nd the remarking of such packages vith the proper grade marks.

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14. That no imature fruit shall be marketed except where the demand is legitimate and the package marked "immature" in plain letters; also that no fruit that is so materially diseased, wormy or otherwise depreciated as to be unfit for consumption shall be marketed; and that the Department be requested to draft legislation whereby the various points and facts embodied in these principles can be put into effect.

17. That the name and address of the packer be placed on all open packages.

18. That fruit packages repacked for sale shall be marked as such and bear the name and address of the repacker, and no change in grade marks sahll be made on such package without the authority of a Dominion Fruit Inspector.

19. That in cases where any standard fruit package is again used for any purpose, the original marking shall be obliterated.

THE FARMER AS A TRAINED SURGEON IN THE ORCHARD AMONG WOUNDED TREES

The "Missouri Botanical Garden Bulletin discusses tree surgery, with examples of the valuable results obtained from this work. It is remarked that there would be little need for this work if trees were properly planted, wellnourished and cared for. Injuries result from carelessness; nails are driven into the bark, trunks are girdled by wire, bark scraped by lawn mowers, and limbs broken, and tree repairs such conditions. While some "tree doctors" shroud the work in mystery, the operations are simple of tree structure, natuer of decay and principles of treatment are understood.

Materials Used

Proper treatment of wounds calls for prevention of entrance of insects and fungi, and facilitation of healing. Protective dressings must be applied to repel insects, either those that disinfect and preserve the wood, making it impervious to entrance of parasites. The first class incluedes creosote, carbolineum, corrosive sublimate, zinc chloride, copper sulphate, etc. Creosote and carbolineum are most generally used, but both are injurious to the cambium, and a coat of shelac should be applied before the disinfectant. The "fillers" include pure white lead and linseed oil paint, coal tar, slaters' cement liquid grafting wax and asphalt preparations. Paint and tar are most commonly employed, but are sometimes unsatisfactory when checking occurs after the wood drys out, leaving openings for parasites; this may be remedied by applying another coat after checking has taken place. Asphalt preparations are gradually superseding the others, being tough elastic and permanent. They are prepared commercially, or may be made by melting the asphalt, stirring in gasoline or linseed oil, and then adding fiber to give it body.

Surgeon's Treatment

Carpenters' gouges, 3-4-1 1-2 inch width, chisels, saws, pruning knives, and gasoline torch are included among necessary tools. First all rotten wood must be excavated, using gouge, chisel or gasoline torch. The mouth of the cavity must be wider in than out to retain the filling, the upper and lower end should be slanted downward to form water sheds, and the entire opening should have an oval form to facilitate healing. Then the cavity is braced by running 3-8-3-4 inch machine bolts from the side of the opening diagonally through the back of the tree. These are inserted every 12-18 inches, for the purpose of preventing the filling from cracking off from the sides, due to torisonal stresses upon the trunk. The hole for the bolt should be bored to be of the same diameter as the bolt, while a square opening should be made in the bark for the nut, deep enough to sink the bolt head under the bark so that it

(Continued on page 441)

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WHEN HEIFERS FRESHEN THEY NEED GOOD CARE

Winter calving, as a rule, is attended with no more dangers than calving during the warmer seasons of the year, providing the cow is placed securely in a good box stall or warm barn with plenty of good straw bedding at the time. The main thing is to see that the barn is well enough enclosed that danger from cold draughts is eliminated. A barn can, and should be, well ventilated without making openings that will create cross currents of cold air. A dairy barn properly equipped will be provided with some good ventilating system that will furnish plenty of fresh air. It will be an added advantage if the box stall is so situated as to allow the sunlight to enter at some time during the day. It is not only more sanitary, but nothing looks more enticing than to see a healthy young calf basking comfortably in the warm, winter sunshine while curled up in the straw in the box stall. If the bedding is kept fresh and clean there will be very little danger of infection of the navel.

By reference to breeding dates it is possible to tell pretty accurately when the cow should be placed in the box stall. No chance should be taken in permitting the cow to run in the fields or pasture at this time. Too much is at stake. A valuable calf might easily be lost through chilling. A costly experience of my own along this line may better serve to illustrate as well as it may be a help to someone else. It was during the winter time and there was snow upon the ground. I was expecting a young heifer to drop her first calf. As was my usual custom, I placed her in the box stall in the barn, but did not keep as close watch over her as I should have done. Cows that have been fresh a number of times are usually very quiet and not so excitable at this time, but not so with the heifer in her first experience. In my absence, this heifer became very nervous and excited and broke out of the box stall and went outside the barn. She dropped a fine heifer calf in the snow. I soon discovered what had happned, but it was then too late. The calf was chilled through and was beyond saving. Under the circumstances I was thankful I didn't lose the heifer too. Now this was a costly experience for me and one that I have never permitted to happen again. The box stall was constructed from most too light a weight of lumber in the first place. Some planks or heavy boards should have been used in the construction and the walls built up reasonably high. It was a new and novel experience for the heifer and I should never have left the barn, but ought to have remained with her quieting her and rendering her assistance.

Practice has taught me that it is much better to handle the young heifers so that when calving time comes, my presence in the stall does not annoy them, but on the other hand tends to quiet their nerves. This, too, I have found a valuable practice in preparing the young heifer for milking. She can be made accustomed to the touch of the hand so that when milking begins there is nothing strange to her and the effect will asily be seen in her milk flow.

STERILITY OR BARRENNESS IN COWS

Manq inquiries come in regarding cows that are barren and do not come in heat. Next to tuberculosis and contagious abortion in cattle, sterility follows in the line of economic losses. As good cows are more valuable and feed higher, it behooves the breeder to keep none but cows that produce and reproduce. Often a favorite cow or a high producer or a pure-bred animal is kept in the herd, the owner expecting her to become settled sooner or later.

The causes of sterility are many—overfeeding show animals or cows fed for a high butter production. Remove the cause. That alone will often correct breeding faults.

Deformed genital organs, as faulty development or lack of development of the ovaries or Fallopian tubes, uterus or vagina. All these conditions are common, and as a rule cannot be corrected, so the best thing to do is to put the animal on the market, being sure that she is sent to slaughter and not to another breeder. Abnormal growths as tumors or cysts of the vagina, uterus or ovaries are not infrequent and produce sterility.

The Most Common Cause

Sterility resulting from contagious abortion is the most common cause, as abortion is common in a large per cent of the herds. Abortion produces sterility and shy breeders by causing a diseased condition of the ovaries and tubes. The germ that produces the disease is very common in the bull and is transmitted by contact. Cows that abort and retain the afterbirth are as a rule shy breeders.

The symptoms are a slight swelling, secretions collect and discharge, small nodules appear. A chronic form may last for months. Treatment for cows that have aborted consists of cleanliness and disinfection of the stables and local treatment of the cows and bull.

How to Treat the Trouble

The local treatment for the disease of abortion, consists of daily washing the external genitals with an antiseptic solution and irrigating the vagina with a mild non-irritating antiseptic solution. Never breed an animal until the discharge ceases. Always put an animal in quarantine after abortion or premature delivery. The discharges are very dangerous as the germs are carried on the feet from the rear of the cattle to the heads while feeding.

The discharges are dangerous to calves should they nurse from a soiled udder. Fatal scours and pneumonia are often caused from germs that are taken in from the udder. Milkers' hands should be washed and strong antiseptics should be used on the udders. The germ of contagious abortion has often been found in milk.

Cows that abort often retain the afterbirth and this causes inflammation, cysts, tumors, etc. An animal should not be allowed to retain the afterbirth longer than 24 hours. The parts CHAPT tion1a z w 1?Su jn should be removed by manipulation under the best and clearest conditions. After treatment use irrigations daily.

Relief for Many Cows

Abortion and sterility are now so common that veterinarians are working to stamp out the disease, also to correct abnormal condition in cows as far as possible. To do this cows are examined, the ovaries are manipulated and cysts and tumors are reduced and as high as 60 to 80% of shy breeders or sterile cows are made to breed.

When the afterbirth is retained it is a good plan to introduce ½ ounce iodoform in olive oil, using a large capsule or wrap it in oiled paper. This will dissolve and prevent decomposition and stops the infection.

The disease of abortion and the complications that follow are so common that if a breeder has a good clean herd he should be very careful not to bring infected animals to put with his herd. When abortion, the thing that produces most of the sterility, gets in a herd, a breeder should make up his mind that it is no easy task to clean up the herd. Good sanitary measures are of the most importance and treatment as outlined kept up. Some men use a vaccine to good advantage. Once the disease has run its course the cows are immune or a tolerance for the germ has been set up.—(C. M. Morgan, D. V. S.

SOME MISTAKES MADE IN FEEDING THE PREGNANT COWS

The real foundation of successfu feeding is surely in preparing th pregnant cow to withstand heavy mil production and at the same time nour ish and build up the frame and giv constitutional vigor to the young calf yet one need not go far in any com munity where dairy cattle are grow and fed, to find dairies where th pregnant cows are being fed upon th cheap feeds of the farm—mixed hay corn stover and straw—while the clov

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er hay, ground oats and oil meal are kept for milk production. The very elements needed to stimulate heavy milk yields are absolutely necessary to create bone, tissue and blood for the new, fast-forming life.

The carbohydrates, which give heat and fat to the animal, are but little needed in the embryo or fetus. No motion, no heat, no energy is required; simply material to build and create, and this rapid development takes place during the last three months of the milking period, when if, at any time, the cow is dry.

The mistakes of feeding during pregnancy have come, no doubt, from a lack of knowledge of the effect of feeds. Nature makes an effort at this period to store up an adequate supply of nitrogenous lean meat, which, to the inexperienced eye, in an animal in very high flesh, presents the general appearance of fat. The very life of the cow depends upon her normal supply of blood, which must be supplied from these nitrogenous feeds. The blood must also contain a sufficient amount of minerals to supply the bony structure of the cow and her unborn calf. To a certain extent the pregnant cow has the power of converting the nitrogenous feeds into heat and energy, but she cannot under any circumstances convert the carbohydrates into tissue, blood and bone.

For a few weeks prior to calving, the cow should be fed laxative and cooling feeds that keep the bowels regular, rather than those of equal protein content, but possessing a stimulating and constipating tendency. Bran has laxative tendencies, is rich in minerals and also bulky. Ground oats are bulky, rich in minerals and seem to have a stimulating effect upon the organs of reproduction. Bran and ground oats can be fed to advantage in every combination of feeds for cows that are with calf. Oil meal fed in reasonable amounts in connection with bran and ground oats has a tendency to aid in the expulsion of the afterbirth. It is neither stimulating nor heating, is relished by all cattle and seems to possess tonic qualities that are particularly beneficial to general health. Such feeds as gluten meal, cottonseed meal and prepared dairy rations, while very desirable for producing milk, are dangerous feeds for pregnant cows and quite out of place in conditioning them for calving.

Especially during the period of preparation for freshening the cows should have good care, fresh air, sunshine and exercise. A cow kept confined in a narrow stall surrounded by foul air and dampness will bring a weak, poorly developed calf that will fall an easy victim to all ailments that make it so difficult to raise good strong calves. Even though such calves may live, they have been robbed of their rights of inheritance and never develop into as profitable animals as they would if they had been given proper embryonic care as well as food.

It is always preferable to plan the management of the herd so that the dry cows, or those heavy with calf, shall be turned out in the yards by themselves. Open cows and heifers that come in heat excite the cows heavy with calf and tend to injuries that cause abortions. The fact that so large a percentage of dairy cows are infected with contagious abortion germs renders the practice all the more dangerous because it may cause an outbreak which will sweep through the entire herd. The safe and sensible plan is to keep the cows that are heavy with calf away from the open cows and heifers, or at least to keep them so separated that there will be no danger of them becoming injured while running together in the yards and pastures.

If the cow is running in the pasture she secures fresh air, exercise and suitable feed and water, but not so with the cow that freshens in the barn during cold weather. She should have a dry, light and comfortable box stall, and it will be well if

(Continued on page 442)

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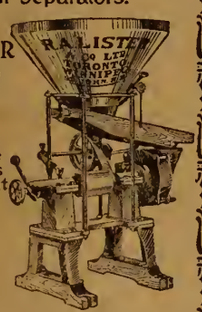

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LIVE STOCK.

SOWS AT FARROWING TIME

Farrowing time is the most critical season for the swine herd. At no other time will care and attention pay greater returns. The results of several months of labor and care may be lost by neglect at this period. Emphasis is justly placed on prolificacy of brood sows, but the number of pigs which they farrow is not the most important consideration. The number they raise determines whether the sow has been kept at a profit or loss. The sow which farrows five pigs and raises all of them is more profitable than the one which farrows fifteen and saves two or three. The disposition of the mother has much to do with the number of pigs she will raise. The way she is handled influences her disposition and, consequently, the results that may be expected.

Strict account should be kept of breeding dates and a week or so before a sow is due to farrow, she should be removed from the other sows to the quarters where she is to farrow. The feed just before farrowing should be the same kind that will be fed while the sow is suckling her pigs. This feed should contain plenty of protein and should also be laxative in nature. A ration of ground oats 50 per cent., good shorts 40 per cent., bran 10 per cent., should give good results. A few days before the sow farrows the amount of the ration should be reduced somewhat. If this is done, and a laxative feed is fed, the sow will come up to farrowing time without fever and will, for this reason, not be apt to injure the pigs by her own restlessness.

Keeping the Pigs Warm

The quarters should be warm enough that excessive bedding will not be required. If too much bedding is provided the pigs may become hidden in it and smothered or crushed. A bushel or more or chaff or cut straw will be sufficient. After the sow farrows it may be necessary to change the bedding, but the amount need not be increased. Dry bdding is more important than the amount of bedding. It should be changed often enough to maintain a dry bed.

Individual cots will be found valuable for keeping sows away from other hogs at farrowing time. Usually the less the sow is disturbed when she is farrowing the better. It is important that one be on hand, but unless she needs assistance, keep away from her. If the sow needs assistance, be as quiet in giving it as possible. The pigs should not become chilled before they have dried and suckled. If the weather is very cold, a lantern hung in the top of the cot will be of service. At such times, if the sow is gentle, it is well to place each pig, as soon as it is farrowed, in a barrel or box containing osme warm bricks covered with old sacks. The pigs may be left here until they are dry and lively cnough to be returned to the sow. If pigs do become chilled, there is no better way to revive them than to dip them in warm water.

The sow should not be fed much for twenty-four hours after farrowing. The pigs are not able to take much milk, and the milk flow should not be stimulated for the first few days. The sow will be more or less feverish and should have all the water she will drink, but will not need feed for a day or so. If the weather is cold, it is well to take the chill off the water before giving it to her. The first feed should be the same kind that she receivcd before she farrowed and should be fed in small amounts as a thin slop. The feed may be gradually increased as the pigs become able to take the milk until the sow receives all she will eat of a good, laxative, milk producing feed. Ordinarily about two weeks should be taken to get her on full feed. After the pigs are old enough to take all the milk the sow can produce, she should be fed liberally since there is no better way of feeding than through the mother.

EVERSION OF THE WOMB

This trouble is commonly termed casting the "Withers," and consists in the protrusion of the womb, or of the vagina, outwards between the lips of the vulva. It is met with more frequently in cows and ewes than in mares. The protrusion may be either partial or complete, and the condition is more serious when the womb is involved than if it is the vagina only. In cases of partial eversion of the womb, or of prolapse of the vagina, there is noticeable a rounded red mass protruding from the vulva. Where there is complete eversion of the womb the whole organ protrudes from the vulva, as an enormous mass hanging downwards. Complete eversion is always a serious condition and causes the animal to keep straining and to become greatly exhausted. Partial prolapse, accompanied by straining, is always liable to lead to complete eversion.

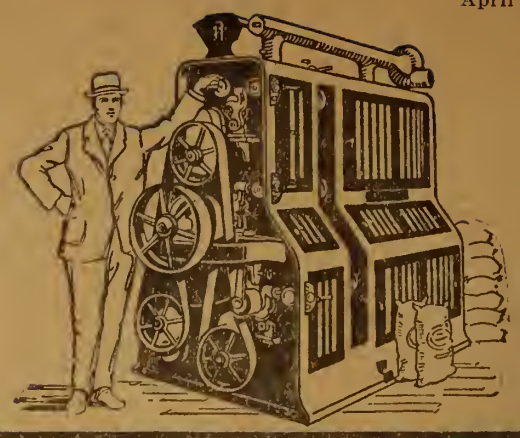
In cases of partial eversion of the womb, or of prolapse of the vagina, the protruding parts may be returned into place by pushing inwards with the hands. The parts may then be kept in place by means of a supporting rope truss affixed so as to compress the vulva.

In cases of complete eversion of the womb, the first step is to support the suspended mass by means of a clean sheet. It should then be washed off clean with a sponge and warm water. Any adhering dirt or shreds of the foetal membranes should be removed. The next step is to return the protruding mass into place. To do so, the animal should be kept standing, if possible, as it can be returned easier in that position. Several methods are recommended for returning the womb into place. In some cases it may be accomplished by means of the closed fist pushing in the centre of the mass until it is carried back inside the vulva and vagina, the other hand at the same time being used to assist in smoothing out and returning the surrounding parts. Another method is to take a long muslin bandage, five or six inches wide, and wind it around the protruding mass as tightly as possible. In applying the bandage begin at the lower end and gradually wind the bandage upwards, covering the entire mass up to the vulva. Having done so, the lower end is pushed forward within itself. As the womb is returning into place, the bandage gradually unwinds. The next consideration is to keep the womb in place, and this may be accomplished by several methods. The most simple and popular method is the application of a rope truss. Another method is to pack the womb and passage full of clean towels or cheese cloth coaked in a warm two per cent. solution of creolin. The packing material is then kept retained by applying a towel over the vulva outside and held in place by pieces of rope tied in front to the horns or around the neck. An additional precaution is to keep the animal in a stall which is raised much higher behind than in front.

SHEEP IMPROVE THE SOIL

The chancc of loss is small in the farm sheep business since comparatively little capital is invested in the flock even at the present high prices. It takes a rather wealthy man to now stock up in cattle but a man of limited capital can buy a few sheep and very soon have a large flock, returning most generous profits.

Sheep return two cash crops annually, wool from the breeding flock in the



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A miller is wanted in your town to take care of the grain from the thousands of new acres now under wheat. More flour is needed.

Make this opportunity—your one big chance to establish a patriotic and profitable business in your town. The man who owns and operates a

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will reap the milling profits from increased wheat production in his vicinity.

The Marvel—the mill that makes that "nut flavored" flour—conforms to all Government regulations and gets the most out of the wheat. It is simply constructed, easily and cheaply operated and best serves the community's interests.

Establish a Marvel Mill in your town—stimulate local production,—stop waste, help eliminate long shipments, make good war or peace flour—and big profits.

If you have as little as $3000 to invest, you should get all the facts of this proposition at once.

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ENTERPRISE
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Because of its reasonable fuel consumption and the thorough manner in which it burns the coal, the Enterprise Blazer is most economical to operate.

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THE ENTERPRISE FOUNDRY CO.
Sackville, N.B.

spring, and mutton from the lambs in the fall or winter. The advantage of cash coming in at different times throughout the year, rather than all at once, is appreciated by all farmers.

Sheep make more economical gains than any other type of livestock. They stand next to hogs in the amount of gains per given amount of feed consumed. Their advantage over hogs lies in their ability to consume roughage, hogs requiring a large amount of concentrates. They will not only eat anything that cattle will and make more pounds of gain on it but will also eat weeds and brush, on which a cow would starve. Due to their weed consuming ability, they will clean a pasture of weeds so that often it will support as many cattle as it formerly did besides feeding the sheep. They also keep the fence-rows clean and are excellent gleaners, picking up all waste grain and even eating much of the stubble after the grain has been harvested.

Another big reason why sheep should be kept on the farm is their ability to improve the soil. Not only is their manure of higher value than that of most animals, but due to their roving habits of grazing, it is thoroughly scattered. Because of their sharp hoofs, it is well tramped into the soil where it is soon available for plant growth. Due to the fact that they always search out one of the highest parts of the pasture to fold at night, they eave more manure there. This is an advantage as these places are usually less fertile, hence need the manure more than other portions.—A. L. Myrs, in the American Sheep Breeder.

SHEEPMEN, ARRANGE TO DIP YOUR SHEEP THIS YEAR

In the face of the high cost of feeds and the ever-increasing necessity of greater production, it becomes more imperative than ever before in the history of our sheep industry, that all handicaps such as the feeding of external parasites be eliminated as far as possible. It is hard to understand why dipping is neglected when one stops to think that it is next to impossible for sheep to make progress when covered with ticks and lice which annoy them continually. It is impossible to estimate the loss of feed and the depreciation in flesh when a flock is infested. One may be certain, however, that a great portion of the feed consumed by the sheep is taken up by these parasites.

A flock free from ticks and lice is the best insurance towards the better production of wool. The continual rubbing against fences, racks etc. causes a loss of wool and damaged fleeces which are docked in price. Dipping should be regularly practised at least once a year, and better twice a year. The sheep should be dipped in the spring as soon after shearing as weather permits; in the fall, before the arrival of cold weather. This will not only free old flocks from ticks and lice, but also tends to keep them free from any skin disease. Even though no disease or parasites be present, sheep should be dipped as a means of prevention and it stimulates the growth of the wool to some degree. Small flocks can be dipped in vats or other suitable utensils on the farm, but in the case of large flocks a regulation galvanized iron or cement tank will be found much more satisfactory.

The initial cost of a convenient dipping outfit would be the greatest drawback to the small owner who realizes the necessity of dipping at least once a year, but does not see his way clear to go to that expense, for a flock of from ten to twenty-fiv.

Community Dipping Outfit

By the small flock owners in a district combining and having a dipping tank jointly owned, it can either be placed at a convenient centre, and all flocks for a radius of from two to four miles being driven to the centre and dipped on a certain day or each sheepman using the tank in turn on his own place. By the latter method it costs more for dipping fluid, as the smaller the flock dipped the greater the waste, but in either case the cost of dipping is greatly reduced.

C. M. McRae.

Meeting Larger Markets

For years after the war, Europe will continue to require all the butter Canada can produce for export. With markets assured, farmers and dairymen demand a cream separator (1) that meets increasing demands without expense and delays of changing machines in order to get larger capacity; (2) that will get the greatest possible amount of first quality cream. A machine that meets both requirements is the

Renfrew

Interchangeable Capacity—When your herd increases you can enlarge the capacity of your Renfrew by simply changing the bowl and attachments. The Renfrew has but one size of frame and driving mechanism—suitable for the highest capacity. If you have a 350 pound capacity machine and later want to enlarge it to 450, 650, 800 or 1000 pound capacity, all you have to do is to order a bowl of the larger size with attachments—not the whole machine.

A large production of rich cream—Maximum production of firmer, sweeter butter-fat from the milk is accomplished by the Renfrew's exclusive curved wing centerpiece. *The Renfrew skims down to the last three ounces in every ton of milk skimmed.* If you have eight cows or more, this means a saving of butter-fat over the results from ordinary machines that will soon pay for the Renfrew.

The Renfrew's close skimming records are fully explained in our latest illustrated booklet, also results of tests by Government Dairy Schools.

Write for illustrated booklet to-day. It explains also the Renfrew's self-oiling system, its easy-to-run, easy-to-clean features, its low supply tank and high crank; its milk-tight and dust proof neck bearing and other important features.

Other Lines: Renfrew Kerosene Engine, Happy Farmer Tractors, Farmers' 2000 lb. Truck Scale.

NOTICE: The Renfrew Separator illustrated here was formerly sold under the name "Standard," which identified it as a high efficiency cream separator. The name "Renfrew" has been used on the same machine for several years for our United States and foreign trade and under that name has become as popular in those markets as under the name "Standard" in Canada. Now the name "Renfrew" has been adopted for Canada so as to link the name more closely with that of our company and so that we can sell the machine under a uniform name throughout the world.

The Renfrew Machinery Company, Limited

Head Office and Works: Renfrew, Ont.

Eastern Branch: **Sussex, N.B.** *Agencies Almost Everywhere in Canada.*

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Ewing's Grass and Clover Seed

No. 1 Government Standard

has earned a high reputation for sure germination, sturdy growth and heavy crops.

We buy the seed from the districts which we have found produce the cleanest and best strains. Then we clean and re-clean it until it comes well within the Government Standard in freedom from those noxious weeds that are so easy to introduce to your fields, and so hard to eradicate.

Some of our famous Brands:

Ewing's "Canary" Brand Early Red Clover.
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Ewing's "Best" Brand Alsike Clover.
Ewing's "Sun" Brand Timothy.
Ewing's "Moon" Brand Timothy.

All No. 1 Government Standard.

If your dealer does not handle Ewing's Seeds, write for prices and catalogue to 49

THE WILLIAM EWING CO. LIMITED, *Seed Merchants,* **McGill Street, MONTREAL.**

THE HORSE

COST OF HORSE POWER ON THE FARM IN EASTERN CANADA

Horse power costs at least 50% less per hour than man power. For this reason more and heavier horses must be used to replace the shortage of man power. Nevertheless, many farmers in Eastern Canada have retained fewer horses than usual owing to high cost of feeds. This is false economy in any year, and especially under present conditions.

The actual cost of horse power is affected by the following factors,—

1. Weight, soundness and quality.
2. Distribution of labour over the year.
3. Condition and vitality.
4. Intelligent and careful handling.
5. Cost of feed.
6. Labour, interest on investment, etc.

The heavy horse of good quality gives the cheapest horse power on the land. The horse properly fed and fitted for work will give much cheaper power than the underfed animal or one soft muscled and lacking in energy.

Although every farmer should have all the horse power necessary, yet under existing conditions of feed and labour costs, horse labour should be so distributed and used to obtain maximum results at the lowest costs.

Every farmer should do a little careful figuring as to cost of horse power and consider well before allowing horses to run down in condition for want of feed and care, or to unnecessarily stand idle in stable or field.

A large amount of data on cost of keeping horses has been collected on the Experimental Farms and from other sources in Eastern Canada, and the following statement may be considered as fairly representative for Eastern Canada with such variations as are thereafter noted. This statement is for a horse weighing 1,600 pounds, working an average of 300 days per year. If the horse were idle during the winter months then the grain bill might be reduced 15% to 30%, at present a saving of $35 to $60. Feeds are charged at about present market prices, but may be figured by the farmer to suit the local cost prices.

Cost Maintaining 1,600 lb. Horse on Work for a Year.

1. Cost of Feed—	
Oats—6050 Lbs. @ 90c per bus.	$160.20
Bran—1300 Lbs. @ $35 per ton.	22.75
Hay—5840 Lbs. @ $12 per ton..	33.04
II. Labour including feeding, preparing feeds, cleaning harness, horse and stable..	28.00
III. Interest on value of horse —5% on $250.....	12.50
IV. Depreciation on value of horse per annum @ 5%...	12.50
V. Interest and insurance on building (costing $100 per horse) @ 5% per annum..	5.00
V. Interest on harness and other equipment @ 5%....	7.00
VI. Interest on harness and	
VII. Shoeing for average farm work	8.00
VIII. Veterinary, drugs, etc., etc. per horse.....	5.10
Total cost maintenance on regular work.....	$294.09

Whatever the reductions may be in cheap wintering of idle horses there is no doubt that it will actually cost $15 or more to maintain the horse during the six months starting May1, 1918.

Cost of Horse Power Per Hour

The actual number of hours per year worked by the average draught horse on the farm in Eastern Canada varies from 1.500 to 2.850, depending on local conditions and the proper distribution of horse labor. The feed costs varying in the same proportion from $155 per horse to $216 per horse at present prices would show an actual cost in feed alone of½ to 10 1-3 per hour of labor. The total maintenance cost in like proportion varying from $230 to $294 per horse would show an actual cost of 15 1-3c. to 10 1-3 per hour of labor. In other words, the greater the number of hours worked per horse the cheaper is the horse labor per hour in spite of the greater feed and labor bills.

Cheapening Horse Power on the Farm

Briefly the means of obtaining cheaper horse power on the farm are:

I. Heavier horses of better type and quality.

II. Feeding carefully in proportion to work performed.

III. Fitting for the extra heavy work of the year.

IV. Working the farm with good brood mares and raising both spring and fall foals.

If this latter plan is carefully followed the mare may easily produce annually in foals the equivalent of 50% or more of her feed cost and still perform 1500 hours or more of actual heavy labor, thus reducing by 15% to 40% the cost of per hour of labor. The type an dquality of the mare and, above all, the excellence of the stallion used ,would determine the success or failure in this regard.

AVOIDING SORE SHOULDERS

An improperly fitted or lumpy collar often causes a bruise, which later breaks into a running sore. There are too many mistaken notions about fitting collars. The commonest of these is that if a collar is buckled as cleosely as it will go at the top and room is left to pass a man's hand between the horse's neck and the collar at the bottom that the collar fits. Sometimes this happens to be alright, but in any case it is only part of what is necessary. Some horses shoulders are much flatter than others, some are more nearly bare of muscle, some are more tender. All these matters must be considered. A hard core or kernel is formed, which must be removed before this sore will heal. Often young or excitable horses will bruise themselves, even when supplied with well-fitting collars, by jerking, jumping or uneven pulling. Some horses seem prone to collar sores, and must be carefully watched to avoid this troublesome injury.

To prevent is more easy than to cure. Harden the neck and shoulders by bathing several times a week with salt water or vinegar in salt water. A little alum may be added. As a substitute for the old oakbark solution try tannic acid dissolved in glycerine. This toughens the skin by tanning it.

When a sore begins to appear, which is usually characterized by a slight swelling, very warm and painful, do not work the animal for a day or two if possible. If the horse cannot be spared make a snug-fitting felt pad, with the centre cut out, and place this over the injury.

Healing powders or ointments such as zinc oxide, boric acid, sulphur and lard, or carbolated vaseline may be used. If a watetry serum runs from the sore, equal parts of tannic acid and powdered alum will prove efficacious. Severe caustics, such as blue vitriol and the like should be avoided. They very often make the condition worse.

Horsemen Attention !

Dr. J. Woodbury's Horse Liniment and Dr. J. Woodbury's Condition Powders will save and preserve the life of your horses. Their use will cure and prevent the disease common to horses, such as Cough, Colds, Distemper, Spavins, Pinkeye, Splints, Curbs, Enlargements, Cracked Hoof, Kidney Trouble, Fevers, Cuts, Sores and will remove bunches of all kinds.

BEFORE USING

Why have a sick or lame horse, when you can get a reliable and warranted remedy? The leading horsement of the Dominion endorse Dr. J. Woodbury's Horse Liniment.

FOR SALE ALL DEALERS

PRICE 25 CENTS

Do you know that "Dr. J. Woodbury's Horse Liniment" is endorsed by all the leading horsemen of the Dominion. Save and preserve the life of your horses by its use. It will cure and prevent disease common among horses.

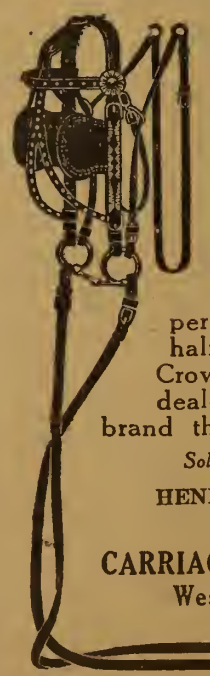
DEMAND
DR. J. WOODBURY'S
HORSE LINIMENT

AFTER USING

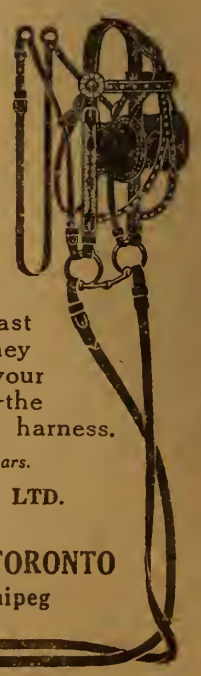
Use this preparation thoroughly for all and every disease of the horse for which it is recommended. Criticise it closely. Carefully watch, mark and notice, its effects, and, honestly judging it on its merits, you will be compelled to endorse it.

Heney Harness

CROWN BRAND



Examine a set of Heney Harness. Look at every detail, every inch of stitching, every inch of leather. Note the extreme precision and carefulness of detail with which every bit of workmanship is finished. Such an examination will be your own "eye-proof" of the superiority of the Heney Harness and will explain why experienced harness buyers for the last half century have preferred Heney Crown Brand Harness. Insist that your dealer show you the Heney Brand—the brand that guarantees a perfect set of harness.



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THE BEST LINIMENT

OR PAIN KILLER FOR THE HUMAN BODY

Gombault's

Caustic Balsam

IT HAS NO EQUAL

For the Human Body

—It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Falons, Exterior Cancers, Boils Corns and Bunions, CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for

Sore Throat
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all Stiff Joints

REMOVES THE SORENESS—STRENGTHENS MUSCLES

Cornhill, Tex.—"One bottle Caustic Balsam did my rheumatism more good than $120.00 paid in doctor's bills." OTTO A. BEYER.

Price $1.50 per bottle. Sold by druggists, or sent by us express prepaid. Write for Booklet R.

The LAWRENCE-WILLIAMS COMPANY, Toronto, Can.

Only soothing medicines should be used.

If the shoulder becomes covered with sores it is because they are contagious, the germs being found in the pus. A good blood tonic is often needed and, in bad cases, the services of a competent veterinarian.

Till a man thoroughly realizes the importance of these two facts and fits his horses accordingly they will have galled shoulders. Some need the hames considerably lower than do others, because their shoulders may stand at different angles. Two horses in the same team, one with the shoulders having very little slant and the other with very slanting shoulders, are worked with the hames in the same positoni, the one whose shoulders do not come flatly against the draft will almost surely raise galle on its shoulders. If the draft is not in the right place the collar will either slip down so as to cut in at the top of the neck, or it will slip up. The result will be a sore neck and that is worse than sore shoulders. There is no more aggravatnig trouble to man and horse than a sore neck during a busy season.

In fitting the collar, the width of a horse's neck in proportion to the up and down length of collar is important. If the neck is thin at the top, as is the usual case with mares and geldings, the collar should be buckled tight at the top. If the neck is thick at the top, somewhat approaching the shape of a stallion's neck, a collar htat is the right length, when open at the top enough to allow for extra thickness will fit better than one long enoug to allow of buckling close at the top.

PROLONGING LIFE OF HARNESS

It is doubtful whether there is anything about the farm that depreciates in value so rapidly as does harness that is not properly looked after. In very few stables is there a room built where harness may be kept away from dirt and the stable dampness when not in use. The usual place for the harness is on pegs behind the horses, and from a point of convenience this is a good place for it; but when the harness is considered, stable conditions are found to shorten its period of usefulness. However, the stable will continue to be the home of most of the harness in the country, and an endeavor should be made to prolong its life if possible.

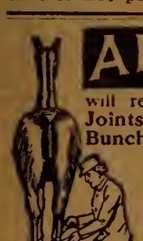
Harness is subject to all kinds of weather conditions and the leather soon becomes hard. Dirt lodges in the cracks. At least once and if possible twice during the year all harness shuold be taken apart and thoroughly washed and oiled. Not only will this treatment cause hte harness to last longer, but the appeaance will be greatly improved.

A warm day should be selected for this work, as it is impossible for leather to properly take the oil if the atmosphere is cold. Every part of the harness should be thoroughly scrubbed to remove the dirt. Luke-warm water-soap, a scrubbing brush and a strong arm to use it make up the necessary equipment for cleaning the harntss. Clean out the keepers and any dirt around the buckles. When the dirt is removed hang the parts in a warm place to dry. Harness oil or prepared paste should be applied to the leather. Neatsfoot oil is frequently used for oiling harness and is found to be very atissfactory if allowed to soak well into the leather. Lamp-black may be added to give the black appearance, but it is not essential. The mistake is frequently made of not rubbing the oil well in. Simply "daubing" it on is not enough. There are also several prepared pastes which prove satisfactory if properly used.

When cleaning and oiling the harness all parts should be examined and weak or worn parts repaired. A harness is no stronger than its weakest part, and a new strap, a few stitches or a new snap or buckle put on now before the season's busy work commences may save delay or passibly an accident later on.

ABSORBINE

TRADE MARK REG. U.S. PAT. OFF.



will reduce inflamed, swollen Joints, Sprains, Bruises, Soft Bunches; Heals Boils, Poll Evil, Quittor, Fistula and infected sores quickly as it is a positive antiseptic and germicide. Pleasant to use; does not blister or remove the hair, and you can work the horse, $2.50 per bottle, delivered. Book 7 R free.

ABSORBINE, JR., the antiseptic liniment for mankind, reduces Painful, Swollen Veins, Wens, Strains, Bruises; stops pain and Inflammation. Price $1.25 per bottle at dealers or delivered. Will tell you more if you write. Liberal Trial Bottle for 10c in stamps.

W. F. YOUNG, P. D. F., 124 Lymans Bldg., Montreal, Can.

Absorbine and Absorbine, Jr., are made in Canada

THE ABUSE OF DIURETICS

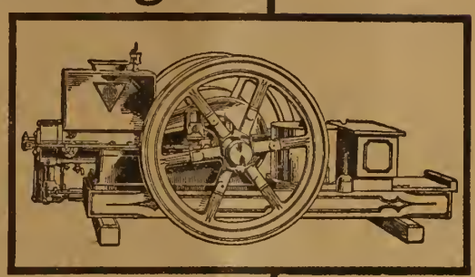
There still linger in some out of the way places old horsemen "who know all about a horse," and amongst other stable knowledge possess some wonderful recipes of extraordinary curative value. Recipes one might say in fact to cure anything in much the same way that some of the up-to-date quack medicines we see advertised, are guaranteed to cure nerves, debility, depression, kidney trouble, and all other ailments with which man is troubled. Many of these "old hands" used an—and some probably do still—make quite a nice little income by supplying grooms and stablemen with their nostrums; usually thep are applied to, to supply drugs to give a glossy coat, to expel worms, something to rub in to cure lameness, wind galls, etc.; and especially something "to clear the water," the kidneys and urine. These evils of animal medication have in the Old Country been specially legislated against, but breaches of the laws are difficult to prove.

Diuretics stimulate the kidneys to secrete more than the usual quantity of urine; some drugs are known to have this property, also some articles of food, such as snow-burnt hay, foxy oats, etc. The frequent use and overdosing of diuretics weaken the kidneys, set up chronic inflammation and suppression of urine, debilitate the horse, and lower his working condition.

Although many diuretics are known only two of the more commonly used will be alluded to here, saltpetre, or nitrate of potash, and powdered resin. The dose of the first should not exceed one ounce for the horse, and it is safer and more efficacious to give half this quanatity at intervals of twelve hours, preferably dissolved in the drinking water.

Alpha Gas Engine

So simple your boy can operate it—and always dependable



When you buy a gas engine you want one that your boy or your hired man can look after.

You want an engine that will always RUN when you want it to. That is the kind of an engine the ALPHA is.

There's nothing complicated about it—no fragile electric batteries, no attachments that puzzle you. Every part is sturdy—built of the best materials—and will stand up under hard work.

You simply oil the Alpha, turn on the fuel—either gasoline or kerosene—give the flywheel a turn, and your engine has started chugging away on an all-day run. You can go away and leave it—pumping water, running a feed-cutter or doing any of the many other things you want it to do. Any one of the thousands of Alpha owners in Canada will tell you that you cannot do better than to use this engine.

Write today for complete information as to how you can save time, labor and fuel with an Alpha Gas Engine.

The De Laval Company, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butterworkers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

50,000 Branches and Local Agencies the World Over

Made in twelve sizes, 1½ to 28 H. P. Each size furnished in stationary, semi-portable or portable style, with hopper or tank-cooled cylinder.

Powdered resin acts as a diuretic; it is not lowering to the same extent as nitre, and is to be given mixed with a dampened feed; the dose is from two to three tablespoonfuls.

There are three cases where a diuretic may be advisable and given with good results. The ox may be kept tied up and without exercise for long periods at a time, and the legs will remain fine. Not so with the horse; he is liable to get swollen legs; some show such a tendency even after one day's rest. The usual treatment is a dose of nitre, which doubtless fines the legs for a time, but the symptom has been treated, not the cause, and the horse is rendered more liable to a repetition. In the majority of cases a tonic, not a lowering treatment, is necessary—massage, warm supporting bandages, and an iron tonic, with small doses of blauber salts, two to four ounces, in water or food, would be curative.

In the case of horses subject to lymphangitis "Monday morning disease," diuretics are often given to reduce and prevent the swelling; but their efficacy is a matter of doubt. Two or three ounces of glauber salts in a warm, sloppy bran mash on Saturday night, and a similar dose on Sunday night, would give far better results, but with this proviso, the horse is never to be kept in the stables tewenty-four hours without exercise.

It is, however, in the character and appearance of the urine that the man in charge bases his opinion that "the kidneys are affected," and that his business is to give large and frequent doses of nitre to rectify matters. As a matter of fact, kidney disease is rare in the horse, and what he considers wrong in want of transparency, uqantity, color, onsistency, may be quite normal.

The urine of a healthy horse is usually turbid, and the quantity varies with the diet, work and seasons, the color varies from clear yellow to yellowish red, especially if red carrots are being fed; if fed on green food, These changes are quite compatible with health, and no drugging is required to rectify them, or bring the urine to a fancied standard, so frequently done at the expense of the horse's health.

It is no exaggeration to say in conclusion that many cases of obscure illnesses are astually brought about by the pernicious habit of administering diuretics as a regular part of the self-imposed duties of some horse attendants.—B. C. TILLETT.

The Recognized Specific of Diseases of the Horse

A sovereign remedy in powder form which cures, Coughs, Heaves, Colic, etc. It strengthens the work horse as well as the race horse, and enables them to do more and better work. It has been successfully prescribed by many veterinarians notably by Dr. J. D. Duchene, in many critical cases, where results have proved remarkable.

A 50c box will be sufficient for six days' treatment.

DR. ED. MORIN & CO., LIMITED, - - Quebec, Canada

POULTRY.

INCUBATION

The keynote to successful winter egg production is "Early hatching." It matters not whether the natural or the artificial method of incubation be used, the chicks must be hatched early, if the best results are to be obtained. If it is impossible to secure enough broody hens early in the season to hatch the number of chicks required, purchase an incubator.

In buying a machine, it should be borne in mind that at the most only three hatches can be taken off in the proper hatching period. The incubator, therefore, should be of sufficient capacity to produce at each hatch, at least one-third the number of chicks required.

There are a lot of good incubators on the market. Do not be deluded into buying a machine just because it is low in price. The low-priced incubator is very often the most expensive in the end.

The incubator should be placed in a room that is fairly even in temperature, has a good, solid floor, and that can be well ventilated without draughts.

In running any incubator, the manufacturer's general directions should be carefully followed as he is the one that should know best what his machine requires.

At the same time, a little variation in the handling will often greatly improve results. Climatic conditions sometimes alter requirements. A machine that does not require added moisture in one locality may in another. A relative humidity of between 50 and 60 inside the egg chamber gives the most satisfactory results; if a machine is not giving these conditions, moisture should be added. This may best be done by placing a tray of wet sand either under the egg tray or above it, depending on how the machine is heated.

In starting the machine, run it for several days until it is perfectly regulated before putting in the eggs. The two kinds of thermometer most commonly used are the standing, which should register about 102, and the hanging, which is usually hung and should register 103. If the hatches are slow in coming off, raise the temperature in succeeding hatches and vice versa.

From the second day until the eggs begin to pip, they should be turned twice a day. They should also be cooled, the length of time for cooling depending on climatic conditions and the temperature at which the machine is being run.

It is advisable to test the eggs twice during the hatch—once about the seventh day when the infertile eggs and "blood rings" should be removed and again about the fourteenth when all dead germs should be taken out. A little practice will soon teach just what it is safe to take out and what to leave in.

As soon as the eggs begin to pip, which will usually be about the eighteenth day, close up the machine and leave it until the hatch is over. When the temperature rises a degree or two, don't get excited, as the rise is to be xpected at this time, and is a good sign. It is due to the heat generated by the chicks struggling to free themselves from the shells. Wait until the hatching is over and the chicks have become thoroughly dried before opening the machine.

POULTRY THAT PAY AND MONGRELS THAT ARE KEPT AT A LOSS

Pure-bred poultry has many advantages over mongrels, and amateur poultrymen who fail to see them are doomed to limited returns and in some cases total failure. Pure-bred is a term applied to fowls that have a long line of ancestors that have been bred pure and without the intermission of alien blood. There is more dependence to be put in the breeding of pure-bred fowls than in that of mongrels.

Pure-bred matings will produce offspring that resemble the parent stock in many ways including size, shape, plumage, egg production, quality of meat, and the power of reproducing pure specimens. Pure-bred poultry of the egg breeds will lay a greater number of eggs than will those of mongrel type. This is because every bit of surplus food that they receive goes to the production of eggs and not to growth of flesh. Pure-bred poultry will produce higher quality meat than mongrels will. The meat breeds have been so bred that all surplus food above what is needed for the upkeep of the body, will go to the production of high class meat. Most mongrel flocks embody a high percentage of Meditteranean blood. The Mediterraneans have a scant supply of meat, many fibrous bands, and very little fatty tissue. The Ylymouth Rocks and Wyandottes considered to be the best type of meat producers have less fibre, more fat and an abundance of flesh growth.

Pure-breds produce a more uniform egg. Each separate breed produces an egg of a certain size and color, and when cross-bred some of the eggs will be large, some small, some brown and some white Some markets demand eggs of a certain color; others will pay a premium on eggs of uniform size and color.

Pure-breds are in demand, and the person who takes up mongrels will never get above market price for stock and eggs. The price paid for pure-bred stock is always higher than for mongrels, and even a commercial plant can find ready sale for surplus stock as breeding birds.

The standards by which pure-bred birds are bred and judged are so arranged that production of high-class eggs and meat goes along with beauty. Thus a flock of pure-bred poultry whether few or many makes a better and more pleasing impression on a prospective customer than does a mixed flock. The uniform flock shows that systematic and intelligent breeding is being practiced. Although looks may not have a strictly commercial value it does establish a name and reputation for the flock or strain which will consequently bring more orders for stock and eggs.

There is more efficiency in feeding pure-bred birds. A poultryman usually selects a type suited to his business whether it be the production of meat or eggs. There is no efficiency shown in the feeding of mongrels of the Asiatic type for eggs. Neither is there any shown in the feeding of mongrels of the Mediterranean type for meat. As efficiency is a present-day slogan this argumnt should have especial weight.

The first cost of pure-brd birds will seem prohibitive to some, and of course the cost of some high-class pure-bred birds is prohibitive to the amateur. This is probably a good thing as the amateur is not fitted nor capable to get the best results and returns from them. The thing the amateur should do is to get a few of the best birds that his pocket book will stand, of the breed that best suits his fancy and purpose. He can cull out the poor specimens each year, and by this system known as "grading up," he can soon have a uniform flock, producing a uniform egg, and in every way a pure-bred flock.

L. L.

HANDLING AND SHIPPING THE DRESSED POULTRY

The specialists recommend the particular observance of the following methods of handling dressed poultry, which are essential to a perfect product at any time and are of vital importance whenever weather conditions are unfavorable:

Keep the shipping crates for your market stock clean, well aired, and free from vermin, and see that the chickens have plenty of fresh water and plenty to eat.

Don't kill a chicken when the crop is full of feed. Give the chicken only water for twenty-four hours before it is killed. Food in the crop or in the intestines of a dressed chicken causes loss of flavor and hastens decay, which more than of-sets any gain from extra weight.

Good bleeding is absolutely essential to a good appearance on the market and retards decay. Circular 61. United States Department of Agriculture, explains the best methods of bleeding and loosening the feather muscles for dry picking.

Hang the chicken by both feet while picking. Hanging by one leg spoils the shape of the bird. Picking on the lap gets the skin dirty and hastens decay.

Dry pick if possible. Scalding is particularly undesirable because it hastens decay.

Chill every dressed bird until the body temperature is below thirty-five degrees Fahrenheit. Never pack or ship an imperfectly chilled bird. More decay is due to imperfect chilling than to any other single factor in dressing. Dry chill, if possible. Chickens cooled in water lose flavor, decay sooner, will not cold store as satisfactorily as dry chilled, and are in every way more undesirable on the market. Refrigerator cars will carry well chilled goods in good condition, but they cannot chill warm goods to a sufficiently low temperature.

Pack in boxes or small kegs whenever possible. A large barrel makes an undesirable package, because where poultry is packed in large masses the weight of the upper layers crushes the birds at the bottom.

Line all packages with parchment paper and cover the top of the poultry before the lid is put on.

Wrap every head in suitable paper so that blood from one bird will not mar the appearance of another.

Use only good refrigerator cars and see that they are in good order. Ice

A Matter of Life and Death

There is no more vital question before the poultry raiser right now than that of saving Baby Chicks. The most important factor is proper feeding. Wrong methods of feeding mean, literally, life or death to the chicks.

Pratts BABY CHICK FOOD

brings the chicks safely through the critical first three weeks. Prevents the usual heavy mortality in young chicks. Insures rapid growth, sturdy constitutions and freedom from intestinal trouble, leg weakness and other diseases common to the newly hatched. Start right with "Pratts." Feed it exclusively for the first three weeks. About one cent per chick is all it costs for the entire period.

Money Back if not Satisfied

At your Dealer's in popular-priced pkgs., also in money-saving 50-lb. and 100-lb. bags.

Pratts White Diarrhoea Remedy

prevents bowel trouble. Use it in drinking water

Pratts Poultry Disinfectant

frees the coops and brooders from lice and mites. Keeps down bad odors.

Write NOW for Pratts new "Baby Chick Book." It's FREE.

PRATT FOOD CO. of CAN., Ltd.
68F Claremont St. Toronto.

P-8

The Little Wonder Cycle Hatcher

Hatches every Hatchable Egg, holds 50 eggs, made entirely of metal, except insulation; self regulating; requires no supplied moisture and will last a life-time. Shipping weight 20 lbs.

(Patented)

Price $10.00

Boxed and delivered to any railway station in the Maritime Provinces.

We manufacture all sizes of Incubators, Brooders, Coal Burning Brooders, and a full line of Supplies.

Model Incubator Co., Limited,

192 River Street, Toronto, Ont.

MADE IN CANADA

Used for making hard and soft soap, for softening water, for cleaning, disinfecting and for over 500 other purposes.

REFUSE SUBSTITUTES.

E.W. GILLETT COMPANY LIMITED
TORONTO, ONT.
WINNIPEG MONTREAL

and salt the car twenty-four hours before loading. The car, at the end of twenty-four hours, should show a temperature below forty degrees Fahrenheit at a point fou rfeet above the floor and between the doors.

Never handle chickens roughly either before or after killing. Rough handling causes bruises, broken bones, scarred skins, and soft places in the flesh. Undue haste on the part of the killers and pickers results in lowered quality and poor appearance of the product.

Piece work, which leads to quantity rather than quality, makes for lower prices on the market. Those who pay by the piece should remember that they sell by the quality of the piece.

These directions will apply with equal force to turkeys intended for the later holiday market.

GIVE YOUR HENS A FAIR CHANCE IN GOOD BUILDINGS

Many farmers still hold to the old-time idea that a poultry house that is intended to house a flock of winter layers, should be tightly closed on all sides—that every crack, crevice or opening should be tightly boarded up.

Contrary to the general opinion, a house that is closed is colder than one that is more open. By far the greater part of the moisture in the hen's body is expelled through breathing, and the air in the house that is closed soon becomes charged with moisture. This damp air makes the house cold, and frost gathers on the ceiling and walls.

The air of a closed poultry house not only becomes moist, but is becomes very impure. Pure air is essential to keeping up the bodily heat of hens, and when the air is impure the resisting force of the hen is greatly reduced and the cold cuts to the bone. Besides being colder, a house full of damp, impure air makes favorable conditions for the development and multiplication of the germs that cause colds, roup and other diseases of the respiratory passages.

Poultry investigators have determined that the air in a poultry house should change completely every twenty minutes. The only way to provide sufficient ventilation to accomplish this is to leave part of the south side of the house open. A safe rule to follow is to have as much open space as there are windows in the south side. Curtains should be provided to cover the openings during snowy or rainy weather, and on severe nights. These curtains will not greatly interfert with the ventilation of the house, since the air can readily sift through the cloth. During ordinary winter weather, however, there is no necessity for having the curtains down.

Some writers recommend the use of roosting closets during the cold months. These roosting closets are box-like structures built against the rear wall of the house. A curtain is provided to stretch across the front of the closet. I had my houses fitted up with these closets and used them one season. During the winter the closets were used I had more cases of roup and colds than I ever had before, or have had since. A roosting closet may be warm, but hens compelled to spend their nights in a small inclosure and breathe the foul air that arises from the droppings may be expected to contract any disease.

The poultry house should be absolutely tight on the north, west and east sides, so as to prevent drafts. If the house is a long one a tight board partition should be placed every 20 or 25 feet to prevent air currents from forming. A drafty poultry house is a death trap. T. Z. R.

TO TRUSS A FOWL

After stuffing the fowl, sew the skin of the neck over the back. Then run a long skewer through the pinion and then through the body and out through the other pinion, pressing them close to the body. Also press a skewer through the thigh and body and out through the other thigh. Pass a string over the projecting ends of the skewers and tie it firmly at the back, to keep the bird firmly trussed. The legs can be crossed over the tail and firmly tied. The wings and thighs can be tied in place by winding a string around the body, if you have no skewers; cut the string off carefully when done, so as not to tear the flesh.

HATCHING CHICKS BY OLD HEN METHOD

Boxes eighteen inches square and eight inches high made good nesting boxes. The nests should be built carefully, preferably with earth in the bottom. the corners being well filled, covered with soft straw or leaves. If the nests are too deep the eggs may pile up and break; if they are too shallow the eggs may roll out. The nests should be placed in a secluded place and the hens should be set after dark. If the hen sits well upon nest eggs for a day or two then she should be given the regular eggs. Set a number of hens at the same time if possible, but where several are sitting in the same room it is well to have the nests covered so that each hen will be confined to her own nest.

The hens should be dusted thoroughly at the time of setting and again just before the chicks hatch; take each hen by the feet, holding the head downwards, and sprinkle lice powder into the feathers and then rub it all around the joints.

Feed the hens on a variety of hard grains and keep clean water before them always.

Be very sure to hatch your chicks as early as possible because late hatched chicks rarely lay well in winter.

M. A. JULL.

BIG-E-NUFF

EASTERN
double-L-bow
Work Shirt
Sold by all reliable stores 2

Cream Saving Machines

IF YOU are still setting your milk and skimming by hand, you are losing anywhere from one-fourth to one-third of your cream. If you are using a separator, and it is not one of the best, you are still losing an amount of cream that would surprise you if you knew it. Every farm loss or leak that can be stopped this year should be stopped. Buy a **Primrose** cream separator and stop the cream loss.

Don't imagine that cream left in the skim milk will fatten pigs and calves faster. It has been proved scores of times that stock thrives as fast on warm separator skim milk, when a little meal or flax replaces the fat. Cream in the skim milk is dead-loss cream.

Primrose separators get that cream. We can prove to you that they get it all, except about one drop in each gallon.

Besides that, they are well-known as simple, easy-running, easily-cleaned machines that last and do the same good work year after year. Buy a **Primrose**—it will pay back its cost in cream you may now be losing. See the local dealers who handle these separators, or, write the nearest branch house for catalogues.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

PEERLESS PERFECTION

A RUNAWAY HORSE

can't break a Peerless Fence. No fiery bull can make a dent in it, hogs can't push through the spaces.

It holds them all **securely.** Ask your nearest dealer to show you the Peerless farm fencing. See the heavy, crimped horizontal wires that allow for all expansion or contraction in extremes of temperature. See the famous Peerless lock that holds the intersections in a firm, non-slippable grip. See the Peerless farm gates. Your dealer guarantees the Peerless to give satisfaction and we stand back of him unconditionally.

Letters Like These from Halifax to Vancouver

The Banwell-Hoxie Wire Fence Co., Ltd.
Hamilton, Ontario

Dear Sirs: I am writing a testimonial as to the strength of your PEERLESS Junior Chicken Fencing. Mine is four feet high. It turned two horses, each weighing 1400 pounds. They ran full tilt into the fencing about 2 rods from each other at the same time. The resnlt was that they turned a summersault over the fence, alighting on their heads and necks, scratching them up some, but the fence remained intact. Yours truly,

JOE BOOTHROYD.
Surrey Centre, B. C.

The Banwell-Hoxie Wire Fence Co., Ltd.
Hamilton, Ontario

Gentlemen: I have handled your fence for four years and find it a good, strong and durable fence, and find that the galvanizing is first-class. In referring to this I have a fence that I put on four years ago across a gulley and the water is as high as the second wire and it is not rusted nor broken yet. I have a team of heavy horses that ran into the fence last summer and did not break or damage it in the least, and I am glad to say that in the four years I have handled your wire I have had no complaints about it.

Yours truly,
Bowesville, Ont. DAVID CUMMINGS.

The Fence That Saves Expense

It never needs repairs. It is the cheapest fence to erect, because, owing to its exceptionally heavy top and bottom wires, but half the usual amount of lumber and posts are required.

SEND FOR LITERATURE and address of nearest agent. We also make a complete line of poultry and ornamental fencing. Agents nearly everywhere. Agents wanted in unassigned territory.

THE BANWELL-HOXIE WIRE FENCE COMPANY, Ltd.
Winnipeg, Man. Hamilton, Ont.

PEERLESS THE ALL ROUND FENCE

Vast Issues Depend
Upon the Welfare of Our Boys

TRY to picture yourself in the muddy cold trenches after exciting days and long nights of mortal danger and intense nervous strain. Rushing "whiz-bangs" and screaming "coal boxes" are no respecters of persons. You are hit! But despite shock and pain you still can face the long weary trudge back to dressing station. Weary, overwrought and depressed you are prey to wild imaginings of that other coming ordeal with the surgeon. There are other "walking wounded," too! You must wait, wait, wait. And then—

Up comes a cheery Y.M.C.A. man, the ever present big brother to the soldier, with words of manly encouragement. Close beside the dressing station the good, generous folks at home have enabled him to set up a canteen. He hands you biscuits, and chocolate or coffee.

"In thousands of cases," writes an officer, "it was that first hot cup of coffee that dragged the man back to life and sanity!"

The tremendous helpfulness of the Y.M.C.A. as an aid to the "morale," or fighting spirit, of the soldiers is everywhere praised. No wonder the Germans make every effort to smash the Y.M.C.A. huts out of existence.

Cheer Up, and Thank God for the Y.M.C.A.!

Y.M.C.A.

Red Triangle Fund

$2,250,000, May 7, 8, 9

Canada Wide Appeal

The Y.M.C.A. is **everywhere.** You first met the helpful manly Y.M.C.A. worker in camp, then on train and boat, at camp in England and in France, close to the firing line. Often he risks his life to reach you in the trenches. He has won the warmest praise from military authorities, statesmen—the King!

Have you a precious boy at the front? You cannot be "over there" to guide him away from fierce temptations of camp and city. You cannot comfort him in his supreme hour of trial. Your parcels to him are necessarily few. But the Y.M.C.A., thank God, is "over there," going where you cannot go—doing the very things you long to do— doing it **for you and for him.**

Will you help? This vast organization of helpfulness needs at least $2,250,000 from Canada for 1918. For your boy's sake be GENEROUS! !

Brief Survey of Y.M.C.A. Service to Soldiers

Branches in 20 Forestry Camps established last year.

Y.M.C.A. nightly under fire in many places.

300,000 letters a day written in Y.M.C.A. buildings.

Troops furnished with athletic equipment (helps morale of troops).

Entertainments, Bible classes, sing-songs, good night services and personal interviews conducted by Y.M.C.A. workers.

Y.M.C.A. Red Triangle Clubs in Toronto, St. John, Montreal and other cities for returned soldiers and enlisted men.

Y.M.C.A. service extends from Vancouver to the firing line and then back to patients in hospitals until men are discharged.

Y.M.C.A. Secretaries accompany troop trains.

Between 400 and 500 millions of letters and cards written and posted in Y.M.C.A. tents, huts and dugouts since war began.

Splendid service to boys in Canadian Camp hospitals. Regular sing-songs and inspirational addresses with distributions of magazines, fruit, chocolates, gum, books and smokes.

National Council, Young Men's Christian Association

Campaign Directors for Maritime Provinces

New Brunswick: Eber H. Turnbull, 64 Prince William St., St. John, N.B. Nova Scotia: D. G. Cock, Chronicle Bldg., Halifax, N.S.
P. E. Island: Lieut. Ulric Dawson, Headquarters Y.M.C A., Charlottetown.

They are Fighting-Dying-for YOU!
What are You Doing for THEM?

IF only you could be in France, close to your boy, think of the comforts you could send him into the lines, how you could hearten him for the supreme ordeal of battle, shield him by your advice, from temptation, comfort him in pain, help him turn his eyes, not always downward into the chaos of war, but upward to the Right we fight for, and to the higher things he learned on your knee

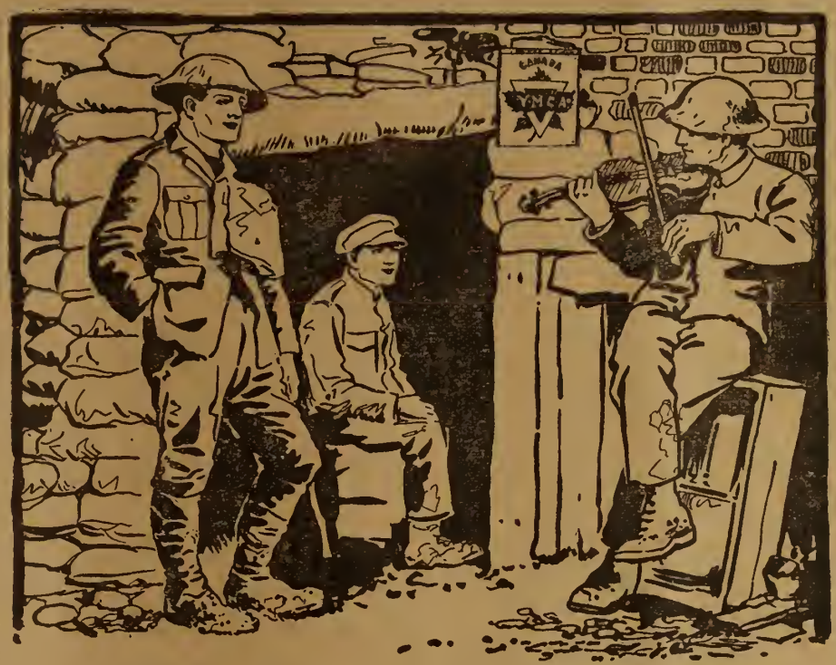
But no—thousands of miles separate you! Not for you are his furloughs, no visits to camps for you, no privilege of visiting your boy in hospital, if need be. Few and far between are the comforts you can send across the wide seas!

Would that you had a friend over there to perform these offices for you! Thank God, **you have that friend.** The Y.M.C.A. is ever at your boy's side, from the day he enlists to the day he doffs his uniform—in camps, trains, boats, in the streets of the big city, in hospital, behind the firing lines—and often right into the trenches—everywhere.

"Right on the heels of the dashing Canadian soldiers at Vimy Ridge the Y.M.C.A. men were serving out biscuits and chocolate to the tired men," said the dispatches. The General was enthusiastic and recommended one of the Y.M.C.A. men for the Military Cross!

Said Lord Northcliffe, "I do not think the War could be fought without the Y.M.C.A.!" A general declared, "The benefit to the troops is beyond all calculation." In the words of Ralph Connor, "The Y.M.C.A. is nearer to the boys than anything else."

Think of the tremendous cost of building and maintaining hundreds of huts with all the thousand and one comforts that must be provided. What will you give to show that you care for your boy's welfare? At least $2,250,000 is needed for 1918. For the sake of your precious boys, be Generous!



War-Work Summary

There are—
89 branches of Canadian Y.M.C.A. in France.
74 branches in England.

Y.M.C.A.

Red Triangle Fund

$2,250,000, May 7, 8, 9

Canada Wide Appeal

Dozens of Y.M.C.A. dug-outs in forward trenches under fire.

$100,000 needed for athletic equipment (helps morale of soldiers).

Y.M.C.A. saved hundreds of lives at Vimy Ridge by caring for walking wounded.

Over 100 pianos in England and France, also 300 gramophones and 27 moving picture machines.

More than 60,000 cups of hot tea and coffee distributed daily in France—free. Estimated cost for 8 months, $48,000.

150,000 magazines distributed free every month. (Estimated cost $15,000).

$125,000 used in 1917 to build huts in France.

Thousands of soldiers decide for the better life.

Y.M.C.A. sells many needful things to soldiers for their convenience.

Profits, if any, all spent for benefit of soldiers.

Service to boys in Camp hospitals.

Red Triangle Clubs for soldiers in Toronto, St. John, Montreal and other places. Centres in Paris and London for men on leave.

Out of Red Triangle Fund, $75,000 is to be contributed to the war work of the Y.W.C.A.

Cost of administration of Y.M.C.A. war work is less than 1%.

National Council, Young Men's Christian Association

Campaign Directors for Maritime Provinces

New Brunswick: Eber H. Turnbull, 64 Prince William St., St. John, N.B. Nova Scotia: D. G. Cock, Chronicle Bldg., Halifax, N.S.
P. E. Island: Lieut. Ulric Dawson, Headquarters Y.M.C A., Charlottetown.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

BILLY'S ORGY

By Grace S Richmond

"Julius," said Mrs. Jack, from the library doorway.

"M-m?" replied Julius abstractedly, without looking up from the letter he was writing. Spoiled drafts of it lay all about him, and his face was flushed.

"Jack and I are going to run into town for the evening. Cook is in the kitchen. I've sent Mary out on an errand, but she will be back in a few minutes. Billy's asleep in the nursery—he won't waken. But if you should want to go out just make sure that Mary and cook are both in—will you? I don't like to have Billy alone in the house with only one of the girls."

"M-hm," assented Julius, still without looking up. His sister crossed the room, laid one gloved hand upon the top of his head, placed the other under his chin, and gently forced him to give her his attention.

"Do you hear what I say?" she urged.

"Yup. I'm not to go out till I know cooky and nursy and cooky's policeman and nursy's postman are in. Shall I have them sit in a circle just outside the nursery door?"

"We shall be back on the ten-forty-five," promised Mrs. Jack, hurrying to the door in response to an urgent appeal from the vestibule. A tremendous gust of wind swirled in as the door closed, rushed through the hall and sucked the various drafts of Julius' letter from the desk. He got up impatiently. At the same instant Mrs. Jack ran back into the house.

"It's storming frightfully," she called, as she dragged some sort of extra wrap from the hall closet and hurried back to the door. "We shouldn't go if it weren't that the Wetherby's always are so——"

Another slam of the door, a fresh whirlwind around the library desk, and Julius tore his latest effort into bits and threw it after the loose sheets which had danced into the corner. He strolled to the window, pulled aside the heavy curtains, and stood gazing out.

"Gee—it is something of a night," he commented. "Wonder Bud got up her courage to go into town in such a storm. Guess I don't care much about sallying forth to call on the Meredith girls, after all. Wondon if there's anything new to read here!

He turned about, looked discontentedly over the shelves, opened two or three books and a number of magazines, dumped them one by one in a rejected pile on the desk, and idled over to the window again.

Two dark forms plunging through the snow waved arms of greeting at him, and he hurried to the front door.

"Well—you fellows must be sick for an airing," he cried, as he admitted an avalanche of snow and a cutting blast of wind at the same time with his chums.

"Get into your togs and come along," commanded the guests, shaking and stamping in the hall, and going over to the fireplace to pull off gloves and warm frozen fingrs.

"Oh, say—not in this blizzard."

"Blizzard nothing. It's a nice night—some of it. What's the good of the holiday vacation if you sit by the fire all through? And the Meredith girls wouldn't take us without you."

"Come off. You haven't been there yet."

"That's right," insisted Tom Ward. "Sally said, 'Go and get Julius Broughton, or you can't stay.' So there we are. Come—hurry up."

"You'll have to wait till I set the bread," said Julius, mounting the stairs without haste.

The two by the fire shouted. Julius lookd grave.

"—and give the baby his cough medicine," he continued. "I'm in charge. I'll have to wind the clock and fill the furnace, an see that all the windows are fast, and put on the night-light in the bath-room—"

"Oh, hurry up!"

"—and see what the temperature is in the nursery—and set the thermostat, and——"

His voice trailed off in the distance, still enumerating particulars. A door slammed somewhere—then another. Presently he called over the baluster:

"You fellows wearing white waistcoats?"

"Yes—HURRY UP!"

Julius dressed with greater speed than his manner with his friends would have predicted. He reappeared prsently, looking extremely elegant.

"Got the bread set?" jeered his guests.

"Er—no. I'll have to speak to cook about that." He disappeared into the dining orom and was heard making a progress through various unknown regions, calling people ho seemed to return no reply. In the course of time he arrived in the hall again.

"If we'd known you were a family man——"

"I am," said Julius solemnly. "I can't find cook nor Mary. My little joke about the bread has become a heart-appalling necessity. I can't go out till they come in."

"You can't!"

"Billy's asleep in the nursery. Two servants and two steadies are supposed to be in the kitchen. They're not there. Bud and Jack have gone in to town for something—back on the ten-forty-five. My going out is off till I can round up Billy's guard."

The guests departed, murmuring madelictions, and extracting from Julius equivocal promises to put in an appearance at the Merediths if it became possible, no matter at what hour.

"This is a sweet thing," said Julius to himself, sitting down in his evening clothes before the hall fireplace, an injured expression on his face. "Didn't want to go out at all till I found I couldn't. Now I'd face a tornado rather than stay in. What under the heavens could have happened to those girls?"

He took another circuit around the house, shouting vociferously. The only, and immediate, result of this was a lusty wail from the nursery.

"Now I've done it," ejaculated the victim in dismay.

He cautiously opened the nursery door and peered in. Billy was sitting up in bed, shaking the sides of his crib with both fat hands and rending the air with the vigorous howls of which a fourteen-months' healthy infant is astonishingly capable. The moment he caught sight of Julius he beat his fists upon the rails of his bed and redoubled his energy.

"Well, leave the roof on," ordered his young nephew, picking him out of his wrappings. "Come here—if you must. Hi—don't touch my cravat. Leave my collar alone, you imp. Now what in thunder am I going to do?"

He turned up the light and sat down in his sister's rocking-chair with Billy in his lap, a vague idea of rocking that young person to sleep again animating his action. But Billy would have none of the rocking-chair. Julius showd him the pictures on the walls—a charming assortment of historic scenes from Mother Goose, in the latest and most artistic guise. Billy scorned them and applied himself to worrying Julius' carefully parted hair.

"We'll go down-stairs—shall we?" asked Julius politely.

Billy crowed.

Julius descended the stairs, Billy's pink toes sticking out below his pink flannel nightgown in a most engaging way. His mother would have been distracted with anxiety at the sight.

Julius sat down before the big hall fireplace again, and punched up the fire into a roaring picture, at which Billy thrust out his bare feet ecstatically, and wound his fat fingers in Julius' neckgear.

"Now, see here," cried that tortured young man. "I won't stand it—see? You sit here on the floor while I go up and get on a bath-robe. If we've got to make a night of it we may as well do it in suitable attire."

When he came back—by way of the still deserted kitchen—he was wearing a gay-striped robe and a pair of slippers. He was collarless and cravatless, and he carried a pink-and-white blanket obtained from Billy's crib.

"I suppose in case Bud should come in unexpectedly," he murmured, as he rolled his nephew in the blanket like an Indian papoose and stood him up on end, "it might be as well to make some slight show of donig up the kid so he won't catch cold."

The moment he was seated upon the rug Billy squirmed himself free from the blanket.

"All right," said Julius resignedly; "have it that way—I don't blame you. Only when you're big enough to get onto our Yale team you will have to take care to pull on your sweater or your bath robe while you're cooling off."

The telephone bell rang.

"Hullo," said Julius, in response. "What?—can't hear you. No—can't make it out. Yes—this is Elliott's. Beg pardon—yes'm. Er—spell it, please. The storm makes bad service. Yes—what—oh—no, no—I can't get away yet, Sally. Awfully sorry—but my sister hasn't come back—and I'm alone. Oh—thank you—I'm afraid it will be too late. Er—goodby."

Coming back to stand on the hearth-rug and gaze absently down at his nephew, tumbling about gaily there, Julius delivered himself of one pregnant syllable:

"Wow!"

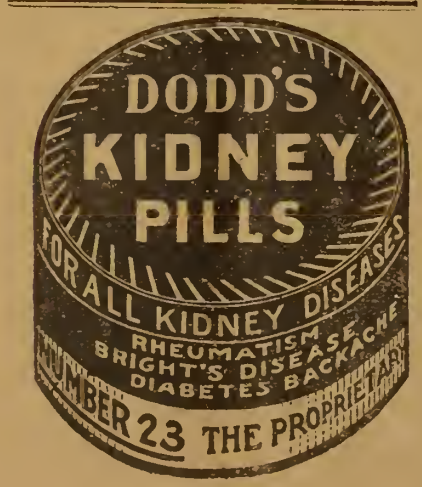
Billy looked up, caught his uncle's somber eye, and gurgled enticingly. He got no notice. He crowed. There was no response. He crept to the foot of the bath robe, parted its folds, and squirmed between Julius's black-clad legs, endeavoring to pull himself to his feet and stand within this improvised tent. Julius adjusted his pose to meet the demands made upon his physical being and his lips slightly unbent as his nephew gave a satisfied grunt from his hiding-place. Then, as Billy leaned out and forward and looked up at him once more, the brow of the Yale sophomore cleared and he addressed his companion in the genial tone to which that young man was accustomed.

"Whatever I'm doing, you're having the time of your life—huh? Downstairs at ten-thirty—and the coast clear. All right, ol man—go ahead. I won't stand in your way. Say, Billy—I'm hungry. Let's go and forage for grub"

He swept the triumphant baby up to his shoulder and marched off with him to the kitchen store-room. Here he switched on the lights and stood, surveying the shelves with satisfaction.

"Bud said I'd eaten up everything in the house the second day of my vacation," he informed Billy, "but I should judge she's got stocked up again. I don't see anything the matter with that cold roast duck—nor the remains of that lobster salad we had for luncheon. I don't see how I came to leave any, though. Perhaps she didn't put it all on—sly thing. Ha—there are some of those dandy little Banbury pies cook makes—and a pot of cream cheese—um-m-m. Billy, we're in luck."

He carried his charge to the dining-room and placed him carefully in his high chair, forgetting all precautions about the blanket and the bare toes. But Billy did not seem to mind.



HAD A VERY BAD COLD and COUGH

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Mrs. M. Summers, Box 309 Windsor, Ont.

He twisted his feet about the legs of his chair and laughed. Julius hurried back and forth between the store-room and the dining-room, and presently had a royal feast set forth, to which he added new items even as he considered it complete. Finally he drew up a chair and sat down.

He filled his plate to the edge, and then stopped and turned to look at Billy, at his elbow.

"Why, say—you seem to be rather left out of this deal," he reflected. "What'll you have? What do you have usually? H'm—milk, mostly—and beef-tea—and soft-boiled eggs? Invalid diet—Billy—huh? What would your lovely mother say if I should treat you to"—his sparkling eye roved over the table—"a bit of lobster salad?" He shook his head regretfully. "It won't do to tempt fate, old man—but I don't see any earthly reason why you can't have one of those Banbury pies. Nothing in 'em but raisins and jam and things. Here—take it—and learn what is food for men—future half-backs, Billy boy."

The fourteen-months-old member of the party seized the Banbury pie joyously, and joyously implanted eight milk-white teeth in its midst. Julius watched him with an interested, satisfied grin.

"Good, old man?" he inquired with relish, wagging his head and smacking his lips. "Mm-m-m—you bet it is. That's it—paint yourself all over with it. Hold on—here's your bib hanging on the back of your chair. Better have it on, Bill—lovely mother's liable to notice jam on the front of your pyjamas and have it in for you. There—now go ahead—and so will I."

They went ahead. There is a charm about these stolen midnight feasts which sedater, sanctioned banquets lack. Billy finished the Banbury pie—such of it as did not fall upon the floor and the tablecloth, the bib, and even the eater's own bare toes. Julius consumed to the last crumb the varied menu which he had prepared, then leaned back in his chair, unbuttoning the white waistcoat which he had forgotten to remove when he dressed for the revel.

"You've had your first orgy, old man," he said gaily to his nephew, "and it was a good one. It's a pity you're too young to remember it. There's nothing about it that will ever give you pain to remember either—that is to say, if you get through the next few hours without any. If you show up with the colic tonight your Uncle Julius will never spree it with you again, Bill; so be wise and conceal your feelings—if you have any. What—more? Oh, no, sonny—you can't have more—there isn't any. Want me to take you? Certainly—but let's go to the bathroom and remove some of the stains of battle. Look out—keep your fists off my waistcoat—Oh, say—"

There was the rattle and thud of the outer vestibule door. Julius glanced in dismay at the Swiss clock on the dining-room mantel.

"Billy," he murmured, "we're caught. We're up against it. Explanations are in order. Where's your blanket? It's in the hall, Bill—she'll see it the first thing."

The electric bell whirred sharply, and whirred again. There was a sound as of the stamping of feet.

"Forgot their latch-key," growled Julius. "Wonder if I've got the force of character to keep 'em waiting while I plunge this kid into bed. Huh—no?" —as a fresh demand of the bell announced the importunity of those waiting outside. "Well—hold on there—let me collect my nerve. We'll get your blanket on, Billy, before we face mother."

He hurried into the hall and dashed the blanket about his nephew—with the customary result of a masculine endeavor to wrap up an infant that Billy's toes protruded from the bottom of his wrappings as naively as ever.

"Keep cool, old man," muttered Julius as he approached the door. "We won't look any guiltier than we can help. Gurgle at your mother and take her attention off me, will you?—there's a good pal. Her goes—they're getting mad, and I've got to——"

He flung open the door. A great laugh made up of seven different qualities of voice, three deep-toned and exulting, four high-keyed and rapturous, filled the hall. Julius fell back before the onslaught of the party who had spent the evening at the Merediths'.

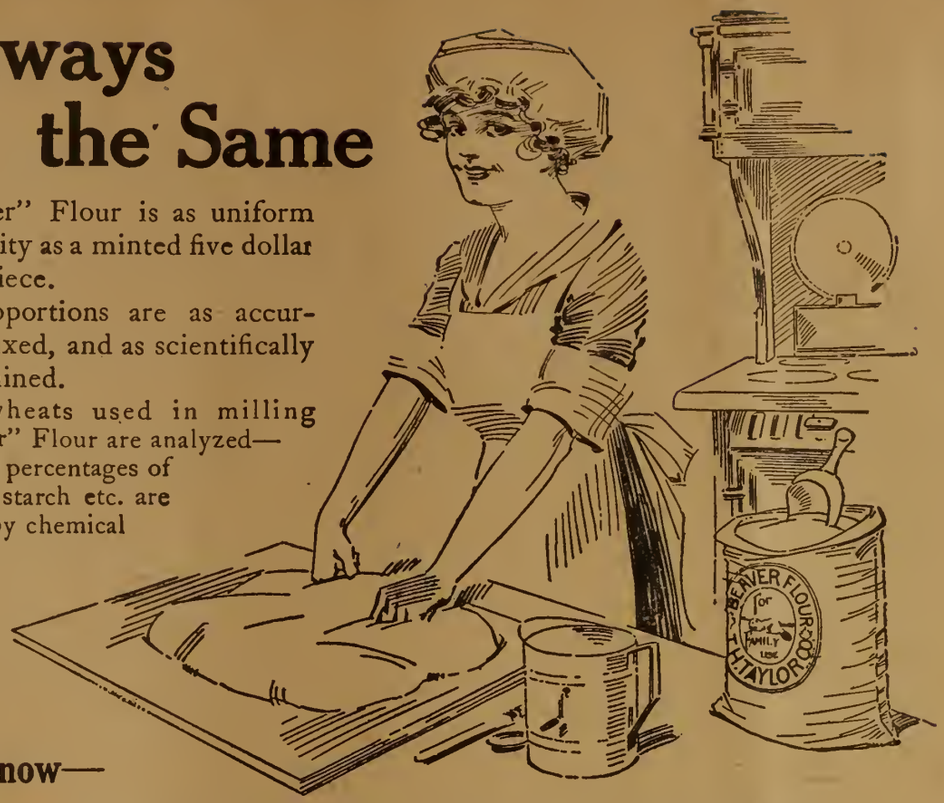
"Oh—I say—" he began, and words failed him. But the guests continued the conversation for themselves.

"Hi—look at the family man!"

"See the faithful fellow at his post. next year's breeders. If October 1st be He should be awarded at least an 'Honorable Mention.'"

(Continued in next issue.)

Always the Same



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HOW TO PLANT TREES AND SHRUBS.

Thousands of newly set trees and shrubs perish within a year or two just because they are not planted properly. This result may be to the advantage of the nursery-man, but it is discouraging to the purchaser. As a rule, though, a little intelligent care in starting trees and shrubs will insure their rapid growth and development. Nursery stock is much like a human baby—it must be coddled a little, kept vigorous, and trained from the beginning in the way it should go. Much depends on the way the stock is handled when it is received. If the roots are exposed to the spring winds for only a short time, they are in danger of perishing. When planting can not be done at once, heeling-in should be practised.

This means digging a trench and setting the plants into it, closely, and at an angle. Then the roots are covered with earth, a little water given, and more earth added. When heeled-in like this, the trees or shrubs will remain in good condition until they can be placed in their permanent location.

At planting time, the roots may be kept under a wet blanket or in a barrel of water. Dipping them in thin mud will help to keep them from drying out. The point to remember is that exposure to the air is likely to result in serious injury.

The next proceeding depends upon the nature of the planting. If a block of fruit-trees is to be set, the land should be carefully and regularly laid out allowing the same amount of space between each tree—forty feet each way, we will say, if the trees are apples of standard varieties. This will allow twenty-seven trees to an acre.

How Holes Should Be Dug

But whether orchard trees on the farm, or street trees along the highway, or ornamental shrubs around the house, they should go into holes which are large enough to receive the roots without cramping them. It is right here that amateurs often make a serious mistake. Digging is not work of the kid-glove sort, to be sure, but a tree or shrub must not be jammed into a hole only half large enough, if it is to thrive. The hole should be as large at the bottom as at the top and preferably a little lower around the outer edge, so that the roots will slant downward slightly.

These roots should be spread out carefully, but first they should be trimmed of broken and bruised ends, a sharp knife being used and a slanting cut on the under side made. More or less of this work is almost always needed.

Sometimes manure is used at planting time, but generally can better be dispensed with, as it tends to dry out the soil; and the nourishment will not be needed for some time. In any case, the amount of manure should be small, it should be well rotted and it should be thoroughly mixed with the soil. As a rule, newly set trees will need no fertilizing until the second year.

It is very important that the soil thrown into the hole after the tree has

SHARP PAINS SHOT THROUGH HEART.

Thousands of people go about their daily work on the verge of death and yet don't know it.

Every once in a while a pain will shoot through the heart, but little attention is paid to it at the time, and it is only when a violent shock comes that the weakness of the heart is apparent.

There is only one cure for the weak heart and that is Milburn's Heart and Nerve Pills.

Mr. H. A. Young, 83 Hayter St., Toronto, Ont., writes:—"I used to have sharp pains shoot through my heart, suffered from shortness of breath, and was so nervous I could not sleep at night. A friend advised me to try Milburn's Heart and Nerve Pills, and after one box I found great relief. Three boxes completely cured me."

Milburn's Heart and Nerve Pills are 50c. per box at all dealers, or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

been set should be well worked in around the roots. Careless planting in this respect is always punished.

Filling In

When small shrubs are being set, the earth may be worked among the roots with the fingers, which do the work better than any tool. After the excavation has been partly filled, several pails of water may be thrown in and will help to carry the soil into all the crevices around the roots. After it has soaked away, the hole may be filled almost to the top and the earth tramped down very solidly with the foot or a maul. Then a few inches of loose soil may be spread on top to act as a dust mulch and prevent the evaporation of moisture. Generally it is well to mound the earth a little higher than the surrounding ground in order to allow for settling.

Most experienced men say that the planting should be a trifle deeper than it was in the nursery row—perhaps an inch deeper. A dark ring on the stem will indicate where the earth came before.

Trees and shrubs apart from evergreens should be trimmed severely when they are planted. The extent of the cutting back may be gauged by the size of the root growth, but it is probable that nearly half the roots are torn off or damaged when a tree is taken up, so they should always be pruned generously. Roses, in particular, should receive severe cutting back, usually to two or three eyes on each strong shoot. Most shrubs will bear cutting back one-half. The top must be made to balance the root system or the latter will be overtaxed.

It is especially important to start fruit-trees right. The ultimate shape of the tree will depend largely upon this first trimming. Low, open heads are wanted on fruit-trees, so that the sunlight and air may be permitted to reach all the leaves and fruit. Then a low-branching habit must be fostered from the beginning. Let it be remembered that a limb never becomes any higher than where it starts.

Branches which cross should not be permitted and it is not well to have more than two parallel branches one above the other. If there are two branches directly opposite each other, it is well to remove one, and so forestall the probable splitting of the trunk later. The shaping of the tree may be controlled by cutting back the branches to three-eighths of an inch above a bun pointing in the right direction.

It is customary to cut the main stem of fruit-trees back to from twelve to twenty inches. Peach trees are often trimmed to a mere whip, but apple and pear trees, if vigorous, may be left with branches cut back to six os seven inches, the branches being carefully cut just above a bud pointing out rather than toward the center of the tree.

What has been said about pruning newly set trees does not apply to evergreens. Because of the fact that they can not be pruned, extra care should be taken to have the soil thoroughly worked in around the roots.

Many people use a mulch of straw or leaves several inches deep round newly planted evergreens, and this plan is a good one in the case of any tree, unless one is prepared to keep the surface continually stirred in order to maintain a permanent dust mulch.

When trees and shrubs are purchased, it is not always an advantage to get those which are large, but it is important to have them strong, with good roots.

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LEAFLESS APRIL

Leafless April chased by light,
Chased by dark and full of laughter,
Stays a moment in her flight
Where the warmest breezes waft her,
By the meadow brook to lean,
Or where winter rye is growing,
Showing in a lovelier green
Where her wayward steps are going.

Blithesome April, brown and warm,
Showing slimness through her tatters,
Chased by sun or chased by storm—
Not a whit to her it matters.
Swiftly through the violet bed,
Down to where the stream is flooding,
Light she flits—and round her head
See the orchard branches budding.

—Miss Ethelwyn Wetherald.

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OUR HERITAGE

A Plea for the Farm by a Daughter

I speak from the standpoint of a farmer's daughter, who realizes the extent of such a heritage. Why are our sisters leaving their farm homes, preferring to stand for long hours behind the counter or over the monotonous click of the typewriter to a life in the country? For various reasons:—

They have been fascinated by the glitter and bustle of the crowds. They have occasionally seen their city cousins idly lolling away the warm morning in the hammock with a magazine or recent novel or promenading shady avenues in the daintiest of white in the afternoon or perhaps on a mild winter day hurrying along with a bunch of jolly chattering companions with their skates.

All this and many other equally attractive scenes are very apparent and naturally appeal very strongly to the girls whose every minute is a busy one.

But the sham; the peevish discontent of the unoccupied seldom comes to light and hence we find that so many of our bright, capable country girls, laboring under a mistaken view of life are watching with eager interest from behind their counter, the constantly changing crowd of shoppers and sight-seers.

Why, after all is it called drudgery? Van Dyke tells us that "the blessing of earth is toil." In so many cases it is hard to see the blessed side of it, but the very fact that we live in Canada, where farm life is so free, open and usually prosperous is a blessing.

We do not have to contend with the burden of much calling and receiving. Our meetings together in the country are usually very informal (glory be). This enables us to spend more of our time out of doors in God's pure air and sunshine unspoiled by factory smoke and six-story brick walls.

We scorn the services of a hired gardener and love to dig our own flower beds, then plant them and keep them clean. We delight in training our own vines and trimming our own grass. In the busy mid-summer this pleasure is often taken after a long hard day, but is such a satisfaction that it proves worth while.

If you don't already possess a natural love for animals, cultivate it. Call them each by name. Pet them until they learn to expect it.

It is strange that so few girls know the exhilarating joy of horse-back riding. Besides being a pleasure, it is a very strengthening exercise. The writer by means of a lump of sugar can coax any horse in her father's pasture to let her on its back and can ride at a brisk canter to the stable without saddle or bridle; and when riding on the King's highway she wears a neat khaki divided skirt and rides astride.

It is a most enjoyable and easy way of getting around. Besides that one can go more frequently and at much shorter notice, rather than hitching to a buggy.

The girl who enjoys all this must, however, guard again it becoming a hobby to such an extent as to make her uninteresting to unsympathetic acquaintances. Oh yes, there are always some who do not understand and are loud with adverse criticism, but "Do right and fear naught." Many people make themselves miserable by fearing what will be thought of them.

This danger, however, can easily be avoided; mingle freely with the best young people of your neighborhood. Read the daily papers and absorb the important items. Read books of the best authors and be able to discuss them intelligently and advance your individual opinions. See and appreciate all the beauty, that life offers. Be loyal to your friends and live a life of the greatest possible service to others.

The life on the farm is the only life that offers all these golden opportunities. Our hritage truly is vast. Accept it and rejoice.

TO PLACE ALL ON EQUAL BASIS

Uniform Administration of Military Service Act Sought By Questionnaire Method

The great crisis through which the world is now passing has served to emphasize among a great many other things the axiom that responsibility is the price of liberty. Because equal privileges are enjoyed by all citizens of Canada, it is the duty of our Government to see, as far as it is abe, that all are made to bear equal sacrifices. That the Dominion's War Government is not unmindful of its duty in this respect is evidenced from the care that is being taken to ensure the equitable administration of the Military Service Act. Questionairres are about to be addressed to all exempted men so as to permit of a checking of the decisions in the case of each to the end that uniformity be established in the application of the legislation. These questionnarries must be returned promptly under penalty of forfeiture of the exepmtion papers previously granted. Exempted men should notify the registrar of their district of any change of adderss, as non-receipt will be regarded as constituting failure to return questionnaire, properly filled in as required. The Government is determined that the Military Service Act shall be administered fairly, and in this determination they will have the active support of all followers of democratic ideals.

Cocoa

4 tbsp. cocoa, 2 c. milk, 3 tbsp. sugar, 2 c. water, pinch of salt.

Mix cocoa, sugar and salt, add water and boil 10 min. Add milk and let come to scald. Beat until thick froth forms to prevent scum forming.

THE FARMER AS A TRAINED SURGEON IN THE ORCHARD AMONG WOUNDED TREES

(Continued from page 425)

will be eventually grown over. The other side has a circular opening to allow for a washer. The cavity and bolts are then creoseted and later fumigated to kill any borers which may be in the sound wood. For this purpose a teaspoonful of carbon bisulphide is used to every cubic foot of cavity, the entire opening being covered with cloth or tar paper, and a piece of cotton saturated with the solution, dropped into the cavity. If the cloth does not allow the fumes to escape, the borers are killed over night. The cavity is then ready for filling.

The material most commonly employed is concrete, either a dry or wet mixture of one to four. The best Portland cement should be used, coarse sand, and ½-inch gravel. No reinforcement is necessary, except the bolts, as it will not prevent the cracking which is bound to occur because of the swaying of the tree. Moreover, the strengthening effect of the reinforcement is questionable because an inelastic substance like concrete cannont strengthen the elastic wood. The dry mixture is the easier to use. The concrete should be mixed so that it will not crumble, and is then laid in the cavity and brought out to within ¼ inch of the cambium layer. It is very important that the filling should be below the cambium to permit it to grow over eventually. The surfaceo fthe filling may be gone over with mortar to give it a smooth finish, and after drying out a coat of tar or fluxed asphalt is applied to make the concrete waterproof. The "dry" concrete has the disadvantage of disintegrating, as air spaces are left which are penetrated by water and the cement leaks out. The "wet" concrete method necessitates the use of a form. This may be made of wood, but that is not economical and requires driving nails ito the bark. A wire netting is better, which may be inserted into the cavity, the concrete poured in and then faced with mortar made of a mixture of cement, lime, sand, and water (one part of cement to two of lime and sand). Still another method requires the use of oilcloth. Two sticks should be placed o neither side of the opening and tied at the bottom by a rope run ning around the trunk. A piece of oilcloth sohuld then be cut to fit over the opening. It is tacked at the top, while the bottom is held in place by soil being banked against ti. Beginning at the bottom a strip of canvas should be run from post to post to act as a suport for the cloth. When 18 inches from the ground is reached the oilcloth is turned back and into the form the wet concrete (1 to 4) is poured. Then a piece of newspaper or tar paper is laid on top to serve as an expansion joint. The canvas strips are again run up 18 inches and the opera tion repeated until the cavity is filled. In order to prevent the concrete from coming out to the surface of the bark it is necessary to remove the oilcloth in ¾ hours, cut off the surplus mater-

These are Anxious Days

NEVER in the history of this old world have the people lived under such tremendous nervous strain as to-day. Millions awake each morning in fearful dread of what the day may bring forth, and live each hour with nerves at highest tension.

While many are falling under the strain, others have found one means or another of fortifying the nervous system so as to maintain health and vigor.

The treatment most widely used is Dr. Chase's Nerve Food, popularly known as the food cure, because it feeds the exhausted nerves and stores up nerve force and nervous energy.

Nothing breaks down the nervous system so quickly as worry and anxiety, and this is why so many people are suffering from nervous headaches, sciatic and neuralgic pains, nervous indigestion and general failure of the vital organs to properly perform their functions.

When you get so nervous that you do not rest and sleep well nights it is time to be alarmed, for it is very much easier to prevent nervous prostration, paralysis and locomotor ataxia than it is to cure these dreaded diseases.

After years of testing under the most severe circumstances Dr. Chase's Nerve Food stands in a class by itself as the most successful nerve restorative to be had. This is being proven every day by new evidence. Ask your neighbors and friends about it and read the reports in this paper, from time to time, from persons who have been cured.

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ail, bringing it back below the cambium, and face the filling with mortar.

Tinning a Cavity

Asphalt mixed with sawdust or excelsior is another "filler." Small cavities are quickly traeted by tinning, a ledge ¾ in. wide and ¼ in. below the cambium being left all around the opening. A pattern is made to fit the tin cut, and both the inside of tin and of cavity painted. The metal is nailed to the ledge with galvanized nails, on e inch apart. After the first year the callus grows over the nails, and the tin is secure.

Where appearances do not count, the "open system" may be used; the entire cavity is cleaned out and painted, no filling being used. It is cheap, keeps out insects and fungi, and is as effective as filling, though lacking in strength and beauty.

Mechanical Aids

Bracing is essential to prevent wounds and consequent decay. For best results an eye-bolt should be run through the limb and connected to another eye-bolt inserted in the trunk, by means of cable rope or iron rods. The cable is rather difficult to work but after it is up, is the most satisfactory of any braces. In bracing small limbs several trands of galvanized wire should be run through the two eye-bolts, then bound together with a wire, and tightened by screwing on the put of the eye-bolt. The eye-bolt will vary from ⅜-¾ inches depending upon the size of the limb. The braces should be placed as high as possible, for, according to the physical law of lever and fulcrum the further from the crotch is the support the less strength is required. Small trees may have their limbs braced by means of large screw eyes and fence wire, or the wire may be run through an opening in the limb double its diameter, and back again. A groove should be made at the back of the limb and a nail inserted under the wire to pre-

vent it from slipping out.

Limbs that have been partly severed may be put in place, the wounds covered with liquid grafting wax, and then braced to the nearest healthy branch. This will sometimes save trees seriously damaged by windstorms or lightning.

FACTORS INFLUENCING CROP YIELDS

(Experimental Farms Note)

Crops require moisture, heat and food in suitable amounts and proportions to make rapid, strong growth. Nature supplies the essentials for life and growth, the farmer's task and problem is to utilize these resources in such a way as to ensure satisfactory yields. Investigations conducted at the Central Experimental Farm, Ottawa, have led to the conclusion that the following factors exert a telling influence towards increasing crop production.

Underdrainage.—Probably the most important and indispensable where the rainfall is great.

(a) To carry off surplus water.
(b) To allow air to enter the soil.
(c) To aid in raising the soil temperature.

It is equally a necessity in soils where moisture conservation has to be considered. Drainage lowers the natural water table in the soil leaving the soil in shape to absorb rain as it falls, that is preserved for use of crops.

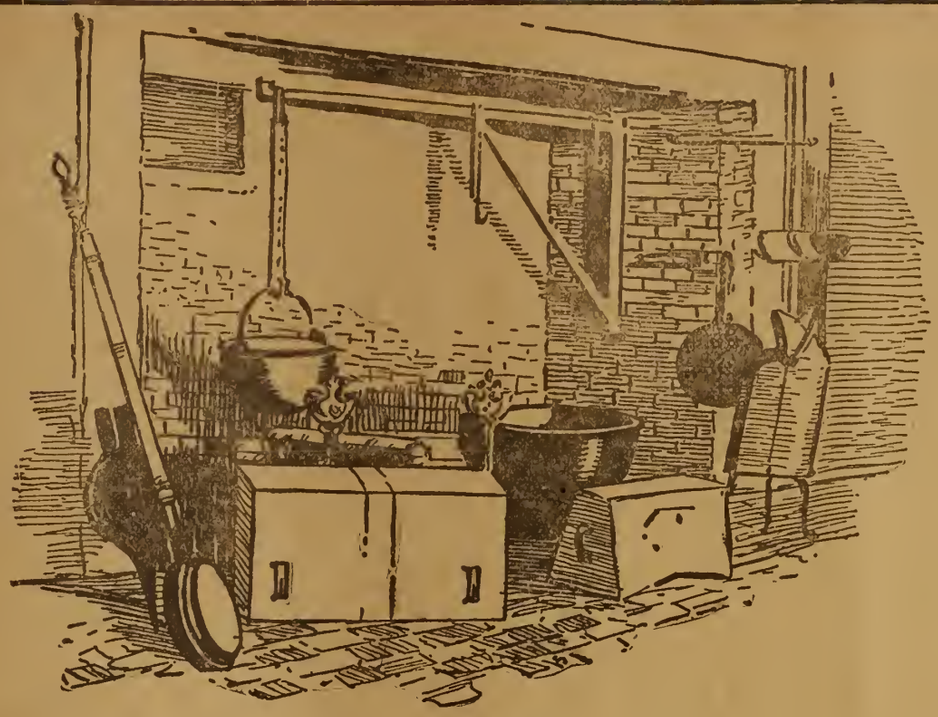
On the whole drainage improves the mechanical condition of the soil and assists in influencing the liberation of plant food elsewhere.

Plant Food.—In the proper proportions for the different classes of crop to be grown. This provides the adoption of a good crop rotation. This rotation should be a short one, say of 3 to 4 years' duration, and the order of crops is most important. Crops such as corn, roots, potatoes and hay, require large supplies of food from the soil for stem, leaf and root growth. This may be most easily supplied by the clover or other sod turned down, or by heavy manuring. The cereals such as wheat, oatas and barley required less of this food and generally do best if sown the year following an application of manure. The area sown to these cereals, if seeded down to clover and grasses, will supply a hay crop the third, or the third and fourth years, and the sod turned down, manured if necessary, fits the land for corn or roots once more.

Such general plan of rotation may be modified by each farmer as will best suit soil and needs, but some such scheme is necessary in order that humus, probably the most valuable of all soil constituents, be added and maintained in the soil, to keep it in good producing shape. Humus decomposed and decomposing vegetable matter is provided in applications of barnyard manure, in legume crops such as clovers and in green manuring crops like buckwheat. Humus absorbs and holds moisture and is a means of raising soil temperature since dark soils absorb heat readily and rapidly.

Manure.—Barnyard manure is most effective fertilizer and furnishes humus forming material. Fresh manure gives crop yields almost equal to those from rotted manure and when applied directly it can be handled more economically with regard to labor. Manure should be spread evenly and incorporated thoroughly with the soil. Applications should be made in moderate quantities frequently rather than in large quantities at long intervals. Apply the manure for hoed and clover or other hay crops in a suitable crop rotation which provides that each field in the farm will receive regularly its fair share of manure.

Proper Cultural Methods.—To make a good seed-bed requires thoroughness in carrying out each step in its preparation.



Baking Day in Grandmother's Kitchen

GRANDMOTHER did her baking in tin kitchens set before the fire. Sometimes she baked a sponge cake in an iron kettle, browning the top with hot coals heaped on the lid. On baking day the kitchen was filled with delicious fragrance because Grandmother made her cakes and pies with *old fashioned brown sugar.*

Gone are the cranes and bellows and tin kitchens but we still enjoy Grandmother's favorite dishes. Mince pies, plum puddings, cakes and many sweets and beverages are much better made just as she made them with soft brown sugar. It is easy to get both the recipes and the sugar with which to make them up. *Lantic Old-Fashioned Brown Sugars* come in three kinds —Light, Brilliant and Dark Yellow—and are for sale by grocers throughout Canada. Brilliant Yellow is particularly good for baking. *Grandmother's Recipes* have been reproduced in a delightful little book which we will send to you for a 2c. stamp to cover cost of mailing.

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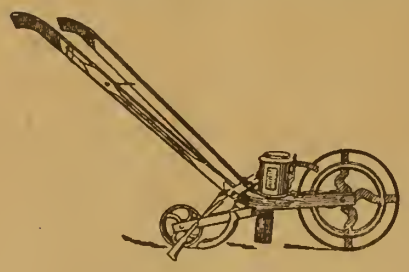

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STERLITY OR BARRENNESS IN COWS

(Continued from page 427)

she is permitted to walk about a sheltered yard daily.

Immediately after calving the cow should be given a drink of warm water. In a few hours a warm bran mash and some clean, bright hay may safely be fed her. It is always better to feed light rations of bulky feeds for the first few days. As a rule roots are preferable to silage until the cow partially regains her normal condition. If the cow cleans promptly, much trouble will have been avoided. If she does not clean within 24 hours, veterinary aid should be summoned.

As the cow regains her normal condition her grain and roughage ration may be gradually changed until she is getting all she can make good use of at the end of the month. I like to bring the cows up to their normal production by the end of the first month after calving.

One point that should have particular emphasis, is to increase the ration gradually. Never add more than one-half pound of grain a day to the cow's ration. Increase at that rate for three days; then rest the cow for a week and give her digestive system an opportunity to adjust itself to the increased amount of feed. Then it is safe to go on and increase the ration, but never more than one-half pound of grain a day. If the scales show that at any time the cow is falling off in her yield of milk, it is pretty good evidence that she is getting more feed than she is capable of handling, therefore, her ration should be reduced until she begins to decrease her yield of milk. A study of the cow herself is the only safe guide as to how much feed she is capable of digesting and assimilating. LESTER J. MEREDITH

CURING MEAT FOR SUMMER

I have been curing pork for summer now for 17 years, and I cure from 500 to 800 pounds annually, and never have any losses through the hams and bacon going bad. It is the old country plan of dry salting that I use. I never smoke the cured meat. We have not yet finished the bacon cured last March. I always use the best pigs I have; those from eight to ten months old, and weighing from 200 to 250 pounds live weigth. I make it a practice not to use the sow pigs unless I have not enough of the barrows. The only reason for this is that I can kill just when I wish, and most men know there are certain times when it is not advisable to kill sows.

In killing it is very essential that the pig be bled right. I roll it over on to his back and stick the knife just in front of the breast bone and fair in line with the root of the tail. There will be no harm done if the knife touches the heart. To clean the pig I always immerse in scalding water and see that hairs and scurf are cleaned off as thoroughly as possible. After taking out the insides I let the meat hang until cold, but not freeze, unless the pig was very small and the sides very thin. I take the ribs out and cut off the ham, leaving the sides and shoulders intact. I also cut off the feet at the knee. It is then ready for the salt. I take a steel, an ordinary butcher's steel, and shove it into the ham down through the shank about six or eight einches and put in the hole half a teaspoonful of saltpetre. I then fill up the hole with salt. I also do this with the shoulders.

Preparing the Sides

I then take the side and shoulder all in one piece, as I said before, and lay it on a table in the cellar, skin side down. I take first one or two tespoonfuls of saltpetre and sprinkle over the meat fairly liberally just at the soft part of the shoulder; very little on the thin part of the meat. I then take two tablespoonfuls of brown sugar and put on the soulder as far down as the thick meat goes. Then give it a fair good covering of salt. The meat will only take so much salt in a certain time so it is really immaterial how much so long as there is enoug, but it is not necessary to put much on the belly part for the brine will run int that. I put a piece of board under th low side of the meat to hold it up s that the brine will not run off. I d

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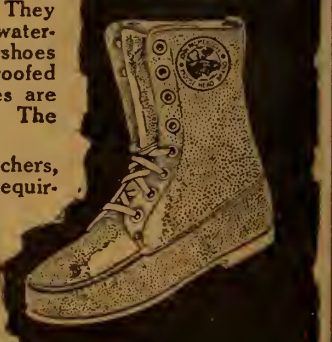
GIVE real foot comfort to tired, aching feet. They are made from oil-tanned Skowhegan waterproof leather. These summer packs or plow shoes are light, strong, durable—made with water-proofed leather sole and heel and solid leather insoles are laced, have large eyelets and bellows tongues. The ideal shoe for working on the land.

They are also specially suitable for ranchers, trackmen, laborers, sportsmen and all others requiring extra strong yet comfortable footwear.

The style shown—No. 109, is nine inches high. Ask your dealer for Palmer's famous "Moose Head Brand" footwear—many styles and sizes to choose from.



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Fredericton, N. B., Canada. 30

this with sides until finished, although four sides are neough for one stack. Just put one on top of another and see that you put the thick part of the meat of one side where the thin part is of the one before it, to keep it level.

Treating the Hams

..I next take the hams, and as I said before, put the saltpetre and salt down through the shanks, then lay them skin down as level as possible. On top of the sides put a teaspoonful of saltpetre on each liberally around the bone, then a good teaspoonful of brown sugar. Then cover with salt. Four hams can be placed on top of the sides without any trouble. The job is then done for ten days, when I just take my stack to pieces and put it together again, only I put a different side at the bottom and a little fresh salt where it is needed. I then leave it for another ten or twelve days, and after that I take the salt off, stand it on edge and drain, then hang up to dry. I like to get this done before the flies get around, for no matter how careful one is the flies will get there first some time or other. After the meat is dry it can be either left hanging in the pantry or packed in oats.

SAVING GASOLNIE; FOURTEEN "DON'TS" TO REMEMBER

Display the Placard and Obey it Yourself

Here are fourteen ways of saving gas as suggested by the U. S. National Chamber of Commerce.

1.—Do not use gasoline for washing or cleaning; use kerosene to cut the grease.

2.—Do not spill gasoline or let it drip when filling; it is dangerous and wasteful.

3.—Do not expose gasoline to air; it evaporates rapidly and is dangerous.

4.—Do not allow engine to run when car is standing. Cars are fitted with self-starters, and it is good for the battery to be used frequently.
use leanest mixture possible; a lean mixture avoids carbon deposits.

6.—See that piston rings fit tightly and cylinders hold compression well. Leakage of compression causes loss.

7.—Stop all gasoline leakage. Form the habit of shutting off gasoline at the tank or feed pipe.

8.—See that all bearings run freely and are lubricated; friction consumes power and wastes gas.

9.—Protect the radiator in cold weather; a cold engine is hard to start and is shor tin power.

10.—Keep tires fully inated; soft tires consume power.

11. Do not drive at excessive speed. Power consumption increases at a fast rate of speed. Every car has a definite speed at which it operates with a maximum fuel economy.

12.—Change gears rather than climb with wide open throttle; it saves car and gas.

13.—Do not use cars needlessly or aimlessly. With exercise of forethought a number of errands may be combined so that one trip to town or elsewhere will do as well as two.

14.—Reduce the amount of riding for mere pleasure by shortening such trips or cutting down their frequency.

THE HORSEPOWER OF WINDMILLS

The suggestion is often heard that the wnidmill should be used for power purposes on the farm. To try to use a single mill for power purposes would be like trying to use a dog for draft purposes. A large mill running in a strong wind will seldom develop as much as five horse power. If its power can be steadily absorbed, as by a storage battery, and then used at higher rate for short periods, it will do very well. One of the best types of windmill, steel, 12 feet in diameter, in a 25 mile wind develops only one and a half horse power. The 16-foot mill under the same conditions, develops about two and a third horsepower. Europe uses windmills in batteries, a number of mills working together—for power purposes, and possibly Canada will find it desirable in the future to get power from the air.

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THE Chevrolet 490 is an investment, not an expense or luxury. Doctors, business men, farmers, salesmen and ladies—all should use the Chevrolet Four-Ninety and crowd more energy, activity and business into the busy day.

The Four-Ninety stands unchallenged in its price class. The electric starting and lighting equipment is most efficient. The car is powerful, roomy, comfortable and economical. The time gained by operating a Chevrolet more than pays for the cost. There also are two larger Chevrolet models on display at the dealers.

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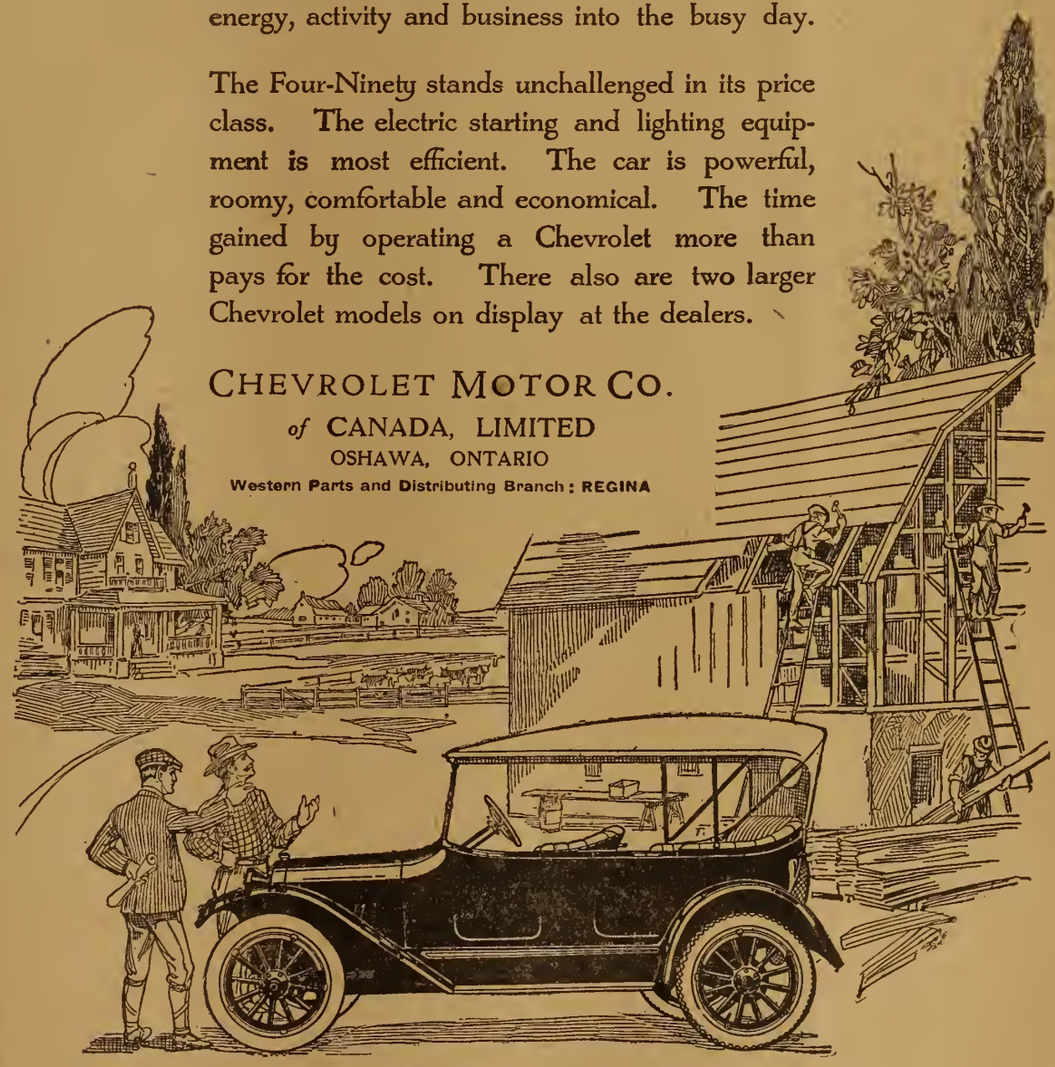

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CULTURAL METHODS FOR EASTERN CANADA

(Experimental Farms Note)

Soil management or cultivation in its several phases is a very important factor in crop production. On the Central Experimental Farm, Ottawa and several of the branch Experimental Stations in eastern Canada, methods have been investigated for several years. The results obtained have warranted the following recommendations being made as applicable to average conditions on eastern Canada farms.

Cultural Operations and Implements

Ploughing is the basic cultural operation. It is therefore important and should be performed with care and judgment. No definite rule can be laid down as to the best method of ploughing. A safe rule, however, is to plough only when the soil is in shape, not too wet especially if of a heavy clay nature. Plough deeply in autumn, as deep as the surface productive soil will allow, turning an up-standing furrow. Plough shallow in spring, turning a low-lying o rflat furrow. Plough well, turn all the land and finish with straight even furrows and lands. Let the ploughing be a credit to the farmer a reflection of his character, a standard for other operatonis and an incentive to less thorough, though willing workers to do better.

Harrowing.—Of the several implements on the market for performing this work the disc harrow is the most suitable for preparing soil for seed arter it has been plowed. Thorough cultivation at this time is indispensable and the disc harrow should be used until the surface of the seed-bed is smooth and friable and the soil immediately below is firm and solid.

The drag or spike-tooth harrow, too, may be employed advantageously in seedbed preparation especially follownig the disc or roller to restore a mulch or blanket of soil to check evaporation of moisture. It is also a useful implement in the corn field a few days after sowing corn and after the corn is up to stimulate a rise in temperature in the soil, to destroy small weeds and encourage germination of weed seeds and to restore the essential mulch.

Seeding.—This operation is now done by means of seed drills. Several types are on the market but the single disc drill is probably most popular.

..Rolling.—The roller is too frequently used to put a finishing touch to the field after seeding. It may be so used to advantage on light soils but even then should be followed by the drag harrow to break the smooth surface. The chief use of the roller, however, should be to firm and crumble the soil before seeding. It should not be used on very damp soil, especially clay; let the surface dry first then use the roller to break the crust.

Where implements are to be purchased it should be borne in mind that larger implements requiring from three to six horses handled by one teamster provide a means of solving to some extent the present manual labor problem. Besides, the work done in this way is accomplished economically and thus tends to keep down the cost of production of crops.

Ploughing may be speeded up by using two-furrow ploughs.—Double disc harrows make a thorough seed-bed in the least time. The horse disc seed drill is efficient. More sections added to the drag harrow reduce the time required for this work.

ECONOMIZE LABOR AND SAVE ENERGY IN FARM WORK

One of the biggest problems in the world today is how to save wasted energy. It is seen on every hand. Men and women everywhere are trying to do things for which they have no liking, or disposition to excel in, but simply because a combination of circumstances has placed them where they are, and they neither have the gumption nor common sense to change their position. It is a safe proposition to

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say that all the useful work of the world could be accomplished at one-half the expenditure of energy that is now exerted if all were wisely directed and everyone working where they could obtain the best results at the least possible outlay of time and effort. A one-time popular and amusing pastime for the young folk, very well illustrates this truth. The outlines of a donkey without a tail were drawn upon a large sheet of paper and hung upon the wall. Those present then took their turn at being placed in the centre of the room, blindfolded and given the donkey's tail to place in the proper position to complete the drawing. Before starting he or she was given two or three turns around to confuse their direction and then told to go. It is needless to say that very seldom did the tail reach its correct location; it was more likely to be pinned on the nose, the back, or the leg of the disfigured quadruped. "Wasted energy!" And yet much of the work of the world is being done just about as blindly as the object of the joke referred to.

All men, and women too, and even the boy and girl can do some one thing better than anything else. Why then, in the main, as their life's work, or as a part of the business in which they are engaged should they not do that thing largely to the exclusion of other things?

On the farm it is a wise provision, no doubt, for all members of the family to become familiar with all kinds of work, but when this is accomplished would it not be better for each one to devote himself or herself to some department in which to become specially interested and which could be, and in all probability would be pushed to a successful issue. The same principle will apply to employees on the farm. If one man is a particularly good plowman, why should he not be kept at that particular job instead of allowing other inferior workmen to do part of that work in an unskilled manner and thus to a large degree interfere with the success of the crop to follow? Perhaps another man has a taste for the livestock end of the business and would take a deeper interest in it that would insure success in his particular line. In all of these or any misfits about the farm, there is a big element of "wasted energy." The plowing that is well done will go a long way toward securing good results in the crop that is to follow. If it is not well done a great amount of extra labor will be required to overcome the ill effects of bad workmanship, a timely sowing will likely be prevented and a much inferior crop result.

On the other hand had the second man been employed at some other phase of the work that he could have done well, or at some other job altogether, no doubt success would have been much more probable at both ends of the effort instead of a partial success only or even a failure.

Now and again a good all-round man is to be found; but today they are very scarce, and becoming more so every year, hence the importance of eliminating waste in applied energy, should be one of the economic studies of up-to-date agriculture. In other lines of business where the labor question has been studied in a far greater degree than on the farm, the workmen in a large measure apply themselves to one line of the business only and so become experts in their department, and while the principal cannot be carried to the same extent on the farm, it is, at east applicable to some extent, and will no doubt work out to the advantage of many farmers who employ several men to accomplish the farm routine of labor.

"Wasted energy" can also be eliminated from other departments of the farm as well as in the matter of the distribution of labor. Any management that causes a man to walk farther than is actually needful to do his ordinary work or chores is wasten energy. Buildings are frequently placed in positions that operate against economy of labor. If possible they should be built and the internal arrangement made to accommodate itself to the idea in hand. Cows should be near the feeding chutes, calves near or convenient to the skimming room and the pig pens and horses where they can be fed without going across a dirty yard to get to them.

Method of work eliminates waste. If one knows exactly what to do next without stopping to think and leaning against the side of a barn to plan it out, every time he repeats the operation, he will not only do much more in the same time but will not be likely to overlook some important part of the work which is not true of hap-hazard labor.

To this end also the old adage "A place for everything and everything in its place," should always hang up in front of a man's memory or better still in a conspicuous place where it will be a daily reminder if its valued teaching. nOe that is always looking for his working tools is never in the best position to accomplish his work expeditiou sly, and not only wastes an endless amount of time searching for them but frequently finds them in a disorderly or worthless condition.

These are only a few of the many illustrations of how "wasted energy can be eliminated. examples of which could easily be multiplied but which it is hoped, will serve to emphasize the importance of economic considerations in all phases of farming operations.

MORE CROPS WITH LESS LABOR

Canadian Farmers are confronted with the most difficult problem which they have ever been called upon to meet—the necessity of increasing food production with an ever decreasing supply of farm labor. To solve this problem, have proposed a number of plans, some of the most important of which are as follows:—

1. Greater co-operation among farmers in every farming community in regard to exchange of farm labor and farm power and greater co-operation of farmers with other interested agencies and with the Government in utilizing the information and other assistance which such agencies are gladly offering to give.

2. The use of labor-saving and larger farm machines for tilling the soil and harvesting and handling the crops which should likewise result in greater achievement with the same or less man-labor.

3. The use of all available farm manure, supplemented when necessary with proper commercial fertilizers, in order to increase the productive power of the land, and thus give larger yields and greater returns for the labor expended.

4. The planting of well-bred seed of adapted varieties of grain and the testing of the germination of seeds in order to insure better stands and larger yields.

5. A more careful organization of the farming business with reference to live stock raising, cropping plans, soil fertilization, the most economical use of available labor, machinery and power which the farm affords, and the securing of necessary working capital to purchase essential equipment and supplies.

6. Greater co-operation among farmers in each farming community in regard to exchange of farm labor and farm power, and greater co-operation of farmers with other interested agencies and with the government in utilizing the information and other assistance which such agencies are gladly offering to give.

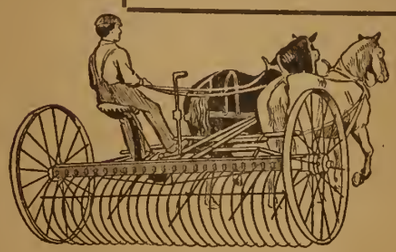
Get a Frost & Wood Mower

Over 80 years' experience with Canadian hay crops behind it—it won't fail you.

It's a rugged, durable implement—it does its work thoroughly—it will cut any crop you want to tackle. Its light draft is famous—due to its superior materials, the perfect alignment of cutter bar, our special internal gear drive and splendid roller bearings. Knives continue cutting when bar is raised to clear an obstruction, saving time and trouble. They cannot wear out cutter bar. Handy levers give immediate, easy control.

As soon as the Mower starts the knives begin to cut.

Give your hay making machinery special attention, now. If you need a mower, dump or side delivery rake, a tedder, a loader or a hay press, better speak to our nearest Agent about it right away. The Frost & Wood implements have a splendid reputation from ocean to ocean—and are the biggest value in Canada to-day.



Built for Hard Quick Work

Frost & Wood Rakes Give Perfect Satisfaction

Don't think all Rakes are just alike—they're not. Frost & Wood Rakes are superior in design, material and workmanship—that's their reputation in the field. Teeth are of special quality, tempered steel, 2 or 3 sections. Self-dumping by easy pressure on foot lever. Heavy angle steel frame guarantees rugged strength and years of steady service.

YOU NEED A COPY OF OUR LATEST CATALOGUE. ASK OUR NEAREST AGENT OR WRITE OUR NEAREST BRANCH FOR IT TO-DAY.

THE FROST & WOOD CO., Limited,

Truro, N. S. ST. JOHN, N. B. Charlottetown, P. E. I.

STRAWBERRY PLANTS FOR SALE

Senator Dunlap, Glen Mary and Bubach grown at my farm. Burton N. B. Write

A. G. TURNEY,

Fredericton, - - - N. B.

FOR SALE

Woodstock Pat—39178—farrowed May 17th, 1915. Champion Berkshire boar of the Maritime Provinces 1916—1917 shows. Sire Mountain Pat, a Toronto Champion and Sire of Toronto champions. This boar is a splendid breeder, is in first class breeding condition and is very active.

J. R. SEMPLE & SON

Valley View Farm, - Truro, N.S.

FOR SALE

Registered Jersey Bulls, one good bull 18 months old. One good calf 5 months old, sired by "Matinella's eminent," whose dam has qualified in the R. O. P. with a record of 10,777 lbs. milk and 530 lbs. fat. His dam has a record of over sixty pounds fat a month and has milked nearly sixty pounds a day.

J. R. SEMPLE & SON

Valley View Farm, - Truro, N.S.

GROW STRAWBERRIES

In the rush of other work, do not forget to set that new bed of strawberries this spring. Many growers are cutting down their acreage on account of labor difficulties and the high price of other crops. Production for the next few years will be cut in two and berry prices are sure to be high. Our advice to our fellow Fruit Growers is, grow all the grain you can, but DON'T GIVE UP THE STRAWBERRY. Among other varieties we recommend Senator Dunlap and Warfield at $4.00; Sample, Arnout, Buster and Glen Mary at $5.00; Wm. Belt, Dr. Burrell, and Bubach at $6.00 a thousand. The great everbearer, Progressive at $1.25 a hundred. Send a card for our free Catalogue.

CYRUS & MANNING ELLS, Port Williams, N. S.

LIVE STOCK SHOW FOR ALL CANADA NOW PROPOSED

An International Live Stock Show for Canada seems assured. The first step in the formation of an organization to get the show under way was taken at the rBeeders' meetings, held early in February, when each association elected delegates to confer together in connection with the matter. The second step was taken last Friday night when the delegates met at Toronto and appointed the following very representative committee to work out all details:

Heavy horses—Wm. Smith, Columbus; Peter Christie, Manchester; E. C. H. Tisdale, Beaverton.

Light horses—Geo. Pepper, Toronto; W. J. Cowan, Cannington; H. M. Robinson, Toronto.

Beef cattle—H. M. Pettitt, Freeman; Jas. Bowman, Guelph; L. O. Clifford, Oshawa.

Dairy cattle—John McKee, Norwich; B. H. Bull, Brampton; D. C. Flatt, Hamilton.

Dairy produce—G. G. Publow, Kingston; G. A. Putnam, Toronto; F. Herns, London.

Sheep—Col. R. McEwen, London; Jas. Douglas, Caledonia; J. M. Gardhouse, Weston.

Swine—J. D. Brien, Ridgetown; J. E. Brethour, Burford; H. A. Dolson, Norval.

Poultry—J. B. Saunders, London; W. W. Simpson, Guelph; G. G. Henderson, Hamilton.

Seeds—A. McKenna, Amherstburg; E. J. W. Lennon, Toronto; W. J. Squirrell, Guelph.

Secretary, Prof. G. E. Day, Guelph; Assistant Secretary, John Gardhouse, Weston.

W. A. Dryden, Brooklin, Ont., and W. W. Ballantyne, Stratford, Ont., were appointed chairman and vice-chairman respectively of the committee. Action in connection with the movement will be taken at once, plans of buildings prepared and method of handling the big show. When this has been done, the whole scheme will be submitted to Toronto, Guelph and Hamilton, the places putting up a fight for it, and after these negotiations the whole scheme will be submitted again to the original committee. While freely admitted that Guelph had done nobly in the matter of supporting the Winter Fair held there annually, yet the general feeling seemed to be that it had reached its limits, viewed from the standpoint of accommodation and that a new beginning with the old idea must be made if Canada is to stand in the very front rank as one of the greatest live stock countries in the world.

TEAM PLAY

The United States is just US—you and I and the folks next door and the people across the way—just US. All the government does is our doing. Its strength is our striving; its resources are our savings. What we do counts to make or break the power of the United States—and every minute, every act—to save or destroy US. In all we do, all we spend, all we eat—we must have care.

Food is our first and last resource, the dominant resource in this war. Our food supply is the final dependence of our allies; the food situation is the worst worry in Europe—worse now than when we began to figure. On our food supply hang their fighting power, their chance of avoiding famine, their hope of survival.

We have already shipped to Europe every grain of this year's surplus wheat. To keep them going, we must stretch our remaining supply—eat more corn and oats and potatoes. We must send them more meat; eat poultry and fish and beans.

That means team play—going without wheat one meal every day and Wednesday every week; it means going without meat one meal every day and Tuesday every week; no pork on Saturday; a weekly sugar limit of three-quarters of a pound apiece.

Team play—you and I and the folks next door and the people across the way—will do all that needs to be done. Let's help.—Maine Farmer.

Necessary Farm Equipment

MORE and more the Ford car is looked upon by progressive farmers as necessary farm equipment, the same as the plow, the hay-rake, the drill, the mower, the harrow and other labor and time-saving machinery.

A farmer with a Ford car can dispense with one or two of his horses and make the trips to town, railway station, creamery, or to the neighbours in one-third the time. In fact there is no farm machine made that will save the busy farmer and his busy wife so much valuable time as a Ford. And it's so easy to take care of—far easier than a horse. No bed to make, or hay and oats to get, no harnessing and unharnessing, and no stables to clean. The Ford practically takes care of itself.

Ask any farmer who owns a Ford if he would ever again try to get along without it. His answer will hasten your decision to own one.

Ford

THE UNIVERSAL CAR

RUNABOUT	$575	SEDAN	$970
TOURING	$595	CHASSIS	$535
COUPE	$770	ONE-TON TRUCK	$750

F. O. B. FORD, ONT.

Ford Motor Company of Canada, Limited

Ford, Ontario

B. T. FARM BOOK FREE TO FARMERS

The editor of the Maritime Farmer has recently received a copy of the revised edition of the B. T. Barn Book, edited and published by Messrs. Beatty Bros., Ltd., of Fergus, Ont. This book, which is profusely illustrated with splendid half-tones of farm buildings and stable equipment, contains three hundred and fifty-two pages and is well bound in a hard-board cover. A copy of this book will be sent to all readers of this paper who are interested in building or remodelling stables and barns, in the near future. As Messrs. Beatty Bros., point out in their introduction, the building or remodelling of a barn is one of the most important events in the lifetime of a farmer. It is a job which he cannot do over again, except at big cost, therefore it is well to do the job right. Before starting the work it is advisable to study the principles of barn construction, best methdos of framing, light, ventilation and layout of stables and to pay particular attention to the kind of equipment installed. The B. T. Barn Book deals with all phases of

barn construction and stable equipment in a most thorough manner, and the editor of this paper would strongly advise all readers of the Maritime Farmer who are arranging to build or remodel their stables this coming summer or contemplate doing so in the near future to send at once for a copy as it contains many practical ideas about the best methods of building remodelling and equipping which have been obtained by Messrs. Beatty Bros. from the leading agricultural authorities of Canada. To give some idea as to the valuable information it contains the following index will be interesting: Design. size, foundations, framing. erecting plank, frame barn. roor pitches. cheaper plank frame construction, doors, windows, ventilation. layout, columns, installing equipment, floors. creosote blocks. mangers, gutters. walls. cement work, measurement of stalls, silos and feed room, temperature, ceilings, free barn plan service, right and wrong methods of remodelling, model barns and plans. which. coupled up with the numerouos illus trations, will be found of great interest and real vaule to all farmers.

SOAP FROM A TREE

It is suggested by a writer in "American Forestry," that the soap nut tree should be more cultivated on this con tinent.

Several important uses are attributed to the product of this remarkable tree. The hull of the nut supplies raw material for the manufacture of soap and other articles which require an ingredient with saponaceous proper ties. This material may even be used as soap without compounding. By shreddiug the hull and using it with water as if it were soap a perfect lather is readily obtained. and some authorities state, that the cleansing qualities are superior to manufactured soaps. The extract's efficiency as a foam-producer makes it useful as an ingredient in carbonated beverages. The kernel yields a fixed oil, which some say for culinary purposes is equal to olive oil. Some thereapeutic value is also attributed to the nuts.

The wood of the tree is close-grained, takes a good polish, and is said to be well adapted for furniture making. The tree grows to a height of fifty feet.

BAD YEAR AHEAD IN FOREST FIRES

The danger season for forest fires is near at hand. Rapidly drying soh has left the old grass, brush. leaves, etc., in a most perilous condition for starting fires.

An effort is being made by the fire rangers in these provinces to keep dow n the forest loses this year to a minimum. They will succeed only if every camper carefully extinguishes his camp fire be fore leaving it, if every smoker refrains from tossing away burnt matches or tobacco in or near a wood. and if settlers in the newly opened districts guard their land-clearing fires with the utmost care. Settlers' fires continue to be the very worst source of forest conflagration. although campers and careless smokers are close competitors.

"The fire rangers," says the Canadian Forestry Association, "want every good citizen to regard himself as a deputy ranger from now until November first.

" ACanadian forest was never worth so much as today, never gave so many jobs as today, never put money into circulation as it does this year."

WHAT THE PLOUGH IS SUPPOSED TO DO

Aside from crumbling the soil, the chief objects of ploughing are to destroy wild plants so that cultivated ones may take their place; and to bury trash, manure, stubble and potato vines. A plough that does not accom plish these things is faulty. All refuse should be completely covered so that it will not be brought to the surface by the harrow. To bury weeds, clover or other tall green manure crops, a chain should be used. one end attached to the plough beam, the other to the double tree. thus allowing the loop to pull the tall plants down into the furrow to be covered. The jointer or skim-coulter is little used in many districts. Many farmers do not know even what it is. When manure, stubble, or grass is to be turned under, it is a very useful attachment. It skims a shallow furrow slice and deposits it in the bottom of the furrow, where it is covered by the main furrow slice and will rot more readily. When stubble or grass is ploughed without a jointer ,there is likely to be a line of it between the furrows, which interferes with the harrow or begins to grow and cause trouble. This is a common sight, but could. and should be overcome by the use of the jointer. The implement dealers of the country could perofrm a distinct service to agriculture by the general use of jointers on ploughs. There should be one on every farm.

It is well to have various types of ploughs for the various kinds of land to be ploughed. This costs more, but greatetr efficiency results. A sod plough will not do good work in soft stubble lands, nor will a stubble plough perform well in stiff sod.—From "Handbook for Farmers," published by the Commission of Conservation.

LITTLE THINGS TO HELP THE HORSE

There are many things to watch in order that a horse may work without galling. These are the most important. The collar should not be longer than enough to avoid touching his wind. It should fit as snugly as possible without pinching and should fit as well at the top as at the bottom. The hames should be adjusted so that the draft will be at such an angle that the collar will not work up and down. The hames should always be tight. More harm than enough is done by working horses with loose hames. It is a good idea to stop at odd times and buckle the hames up properly.

The best experience seems to prove that a sweating horse is less likely to take harm from a cloth faced collar. Sweat pads should be avoided wherever possible, and if they must be used the collars should be tighter than when used without the pad. Carefui watching by the teamster is the important thing. During hot days the horse's shoulders should be carefully watched and collars lifted occasionally. A breathing spell of two minutes to the horses with their collars held up half a minute will do much to cool their shoulders and keep them in bet ter condition. Manes should be kept out from under the collars. Collars should also be well cleaned each night. There is nothing more conductive to sore shoulders than a dirty sweaty collar, and on a hot day a few hours work puts the collar in that condition.

IMPERIAL SERVICE

If you are in doubt about the proper lubricant, *ask the Imperial Oil man.* He will give you courteous attention and sound advice on your lubrication problems. That is part of Imperial Service.

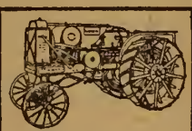
LOOK TO US FOR LUBRICATION ADVICE

TRACTORS, automobiles, stationary engines, threshing machines and binders, present different problems in lubrication. When you burn kerosene in place of gasoline, you change your lubricating requirements. Tight and loose bearings—cylinders and axles—require different lubricants. There is no one best lubricant for all purposes.

But there is a scientifically correct and extremely efficient lubricant for each type of engine and fuel. There is an oil for every lubricating condition. At Imperial Oil stations in all parts of Canada, you can find the oil that will make you forget lubrication troubles and give you the full power and usefulness of your machine.

Each Imperial lubricating oil is sold in steel barrels and steel half-barrels—most convenient and economical. There's no waste. You use every drop you pay for. And it's uniform and clean.

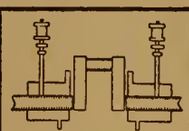
A Correct Lubricant for every Farm Machine



For Gasoline Engines, Tractor, Auto or Stationary
POLARINE OIL
STANDARD GAS ENGINE OIL
For Kerosene Engines, Tractor or Stationary
POLARINE OIL HEAVY
IMPERIAL KEROSENE TRACTOR OIL
(Recommended by International Harvester Co.)

For Open Bearings of Farm Machinery
PRAIRIE HARVESTER OIL
—very heavy body, resists cold, won't thin out with moisture
ELDORADO CASTOR OIL
—a thick oil for worn and loose bearings

For Steam Cylinder Lubrication, whether Tractor or Stationary Type
CAPITOL CYLINDER OIL
—the standard product for steam cylinder lubrication



THRESHER HARD OIL
For Grease Cup Lubrication of Bearings
a clean solidified oil high melting point

IMPERIAL OIL
LIMITED
BRANCHES THROUGHOUT CANADA

FIRST AID IN THE KITCHEN
Mends Leaks in Graniteware, Tin, Aluminum, etc., in two minutes without tools. Saves a kettle for half a cent. At dealers or from us, 15 cents.
Vol-Peek Co., Box 2024, Montreal, Can.
VOL-PEEK

MARKETS.

HALIFAX

Potatoes—$1.75 bg. 90 lbs.
Corrots—$2..50 bbl.
Turnips—$1.00 bg. 100 lbs.
Parsnips—2½c. lb.
Butter, Creamery—49c.
Butter, Dairy—44c.
Cheese—24c.

ST. JOHN

Beef Carcus.—12c. to 17c. lb.
Veal Carcus.—12c. to 17c. lb.
Hogs Carcus.—24c. to 26c. lb.
Mutton Carcus.—18c. to 22c.
Beef Hides.—None.
Sheep Skins—$2.00 to $3.00.
Calf Skins—30c.
Potatoes—$2.50 to $2.75 bbl.
Carrots—$2.50 bbl.
Turnips—$1.50 bbl.
Parsnips—$3.00 bbl.
Fowl—50c. lb.
Butter, Creamery—52c. lb.
Butter, Dairy—45c. to 48c.
Cheese—22c.
Eggs.—38c. to 40c.

CHARLOTTETOWN

Beef Carcass—12 to 16c., retail 8 to 26c.
Veal Carcass—10 to 14c.
Hog Carcass—21½ for selects.
Lamb—None.
Mutton—15 to 18c., very scarce.
Beef Hides—8c lb.
Sheep Skins—$3.50 to $5.00.
Calf Skins—10 to 15c.
Potatoes—40 to 60c per bushel.
Carrots—None.
Turnips—20c. per bus. of 50 lbs.
Parsnips—None.
Oats—1.00 to 1.05c for feed oats, seed oats 1.20 to 1.40.
Cornmeal—None.
Bran—$44.00 per ton.
Oatmeal—$6.50 for sack of 98 lbs.
Middlings—$50..00 per ton.
Cotton Seed Meal—None.
Oil Cake—$3.75 to $4.25 bag of 100 lbs.
Buckwheat—None except imported for seeding.
Ontario Flour—White, $11.75 to $12.25.
Manitoba Flour—White, $12.75 to $13.25.
Little or no war grade flour has reached us yet and there is still some of the white flour en route which has been on the road for three months.
Hay—Scarce, loose $1.00 per 100 lbs.
Hay—Pressed, $1.10 per 100 lbs.
Chickens—None.
Fowl—None.
Turkeys—None.
Geese—None.
Butter, Creamery—48 to 50c.
Butter, Dairy—40 to 44c.
Cheese—Wholes 23c., twins 23½.

MONTREAL

Dairy Produce Trade

The receipts of butter today were 228 packages, as against 96 for the same day last week, and 378 for the corresponding date a year ago. The tone of the market remains firm under a steady demand for all supplies coming forward to meet immediate wants, and a fair trade was done in a wholesale way in finest creamery at 52c to 52½c per lb. It was reported today that several cars of creamery butter were on the way from the northwest. Arrivals of oleomargarine from the United States were more liberal today, and quite an active trade was done in a wholesale jobbing way at 32c to 34c per lb, as to quality.

We quote prices as follows:

Finest Creamery.....52c to 52½c
Fine Creamery .....51c to 51½c
Finest Dairy.....45c to 46c
Fine Dairy.....43c to 44c

The receipts of cheese today were 124 boxes, as compared with 196 for the same day last week, and 1,834 for the corresponding date a year ago. There was a good demand for small cheese today for domestic consumption, and sales of some fair-sized lots of 20-lb. cheese and twins were made at 23¾c per lb. and early made 2-lb cheese at 32c.

The Allied buying commission in New York are buying Northern New York State fodder cheese at 22c per lb. alongside steamer at New York.

The United States Government Bureau statistics show stocks of creamery butter to have increased 108.3 per cent. over April 1st, 1917, and the stocks of cheese showed an increase on April 1st, 1918, of 225.6 per cent. as compared with the same date a year ago.

The Commission is paying the following prices:

No. 1 Cheese.....21¾c
No. 2 Cheese.....21¼c
No. 3 Cheese.....20¾c

The Price of Cheese

With regard to the price of cheese, I am sorry to say that we, at least in our vicinity, are anything but satisfied with what we are getting for our milk. We are nearly compelled to send our milk to a pooling factory where it took 11.57 pounds of milk in August, to make one pound of cheese, and 10.91 pounds in October, for which we received $1.64 in August, and $1.77 in October per 100 pounds of milk.

We should have at least 25 cents per pound for cheese, with $1.75 off

SHERWIN-WILLIAMS
PAINTS & VARNISHES

Your Home Needs Protection

You can't afford to "let the painting go this year". Rot and decay are the greatest menace to property. You keep up life and fire insurance—why neglect your home?

A little paint or varnish on the outside or inside *now* will save you much greater expense later on.

LOOK IT OVER! THINK IT OVER. PAINT IT OVER!

with

SHERWIN-WILLIAMS
PAINTS AND VARNISHES

SWP for the House assures you of quality and durability, covering capacity and permanence of color.

S-W Flat-Tone: A flat oil paint for interior walls and ceilings. The best decorators recognize the value of Flat-Tone for producing a permanent, velvety finish that will not rub off and is washable.

Send for our free book: "The A.B.C. of Home Painting," written by a practical painter, telling how to paint, varnish, stain or enamel every surface in and around your home.

THE SHERWIN-WILLIAMS CO., OF CANADA, LIMITED
897, Centre St., Montreal, Que. 110 Sutherland Ave., Winnipeg, Man.
PAINT, VARNISH AND COLOR MAKERS. LINSEED OIL CRUSHERS.
8

FIGHT THE BUGS
IN AN EFFICIENT MANNER
Get a
"PERFECT"
SPRAYER
Help to win the war through food production
Ask for Prices
Made by
R. B. WESTHAVER, : Mahone Bay, N. S.

for making, which would leave us about $2.20 per 100 pounds of milk, which is not near the price they are paying at the condenseries, or in the city. However, $2.20 per 100 pounds of milk would give us just margin enough to stay in the business and do our best to help to swell the cheese, which is so conveniently used in the trenches by our soldiers.—Level Lea Stock Farm.

Millfeed and Rolled Oats

In this department of the trade there was no new features to note. Supplies of millfeed continue small , and in consequence business is quiet and prices are unchanged with bran quoted at $35.40, and shorts at $40.40 per ton including bags. The trade in pure grain mouillie is fairly active owing to the good demand and prices rule firm at $75 per ton including bags. There was no improvement in the domestic demand for rolled oats, and the market was quiet. Standard grades in broken lots quoted at $5.50 to $6.50 per bag of 90 lbs. in jute, and car lots at $5.40 per bag of 90 lbs. in cotton. A fair business continues to be done in cornmeal in a wholesale jobbing way and prices are firmly maintained with sales of Golden grades at $6.25 to $6.40 and bolted at $4.50 to $4.75 per bag delivered.

Country Produce

market for eggs teday, and prices were unchanged. The recepits were large, but as the demand continues very good for domestic consumption and for storage account they had no influence on the situation, and an active business was done in a wholesale jobbing way in fresh-gathered stock at 42c per dozen. The receipts today were 3,097 cases as against 1,440 for the same day last week, and 1,965 for the corresponding date a year ago.

The market for maple product was without any new feature to note, prices being firm, with a continued good demand for supplies, and an active trade was done in a wholesale jobbing way, with sales of five gallon tins at $2.10 per gallon, one gallon tins at $2.15, and 8½ tins at $1.50. The demand for maple sugar is also good, and all supplies coming forward are meeting with a ready sale at 20c to21c per lb.

There was no change in the condition of the market for honey, prices being maintained, with a small trade passing in a wholesale jobbing way, and sales of No. 1 white clover honey in comb were made at 21c to 22c per section, No. 2 white at 19c to 20c, No. 1 brown in comb at 18c to 19c, No. 2 brown at 17c, and white extracted at 18c to 20c per lb. in 30-lb tins.

The tone of the market for potatoes remains steady under a fairly good demand for small lots to meet actual wants, and a good trade was done in a wholesale jobbing way, with sales of Green Mountains at $1.55 to $1.60 per bag of 80 lbs, ex-store, and car lots on spot were quoted at $1.50 per bag of 90 lbs. ex-track.

THE MANUFACTURE OF CREAM CHEESE

(Experimental Farms Note)

At some time or other during their carrer, most dairy farmers have experienced difficulty in marketing their produce satisfactorily. The trouble may have beenbe cause of a poor demand for their product, or the quality may have been below standard.

The dairy produce from the Experimental Farm, Agassiz, B. C., has been sold in a number of different ways, one of the most satisfactory of which is in the form of cream cheese. The cream cheese appears to be the most popular soft cheese. It is easlly made on the farm and requires very little special apparatus. The labor and cost of making and packing are small, so that the manufacture is well suited for any producer within a reasonable distance from a market. It is a suitable and remunerative method of marketing cream. During cool weather we have been able to keep this cheese for a week or ten days without any appreciable deterioration in flavor, but, as evaporation is going on continually, the cheese, unless originally made overweight will not be up to the standard weight at the end of this time. It is therefore advisable to place it on the market as soon as possible after completion.

The market as yet is limited but the demand appears to be increasing. We have sold during the past twelve months 5,420 of these cheeses in the city of Vancouver. The wholesale price obtained is 15c. each, which amounts to $813.00 for the product during the past year. Each cheese weighs six ounces and approximately ten dozen are now being manufactured weekly from 170 pounds of twelve per cent. cream. This brings a return of ninety cents per pound butterfat for the cream, with the whey retained for feeding purposes.

The shape of the cheese is cylindrical from one ot one and a half inches deep and three inches in diameter. When moulding, the cheese is pressed into a cheesecloth cover and when ready for shipment is incased in a neat cardboard carton. It is a cheap cheese and a convenient size for table use. Picnicers have found it a suitable substitute for meat as a filling for sandwiches. It is also found to be very delicious and palatable when served with lettuce, celery or any of the various kinds of vegetable salad.

The method of manufacture is concisely described in Exhibition Circular No. 23, which may be obtained for the asking from any of the Experimental Farms.

FOR mops, brooms and brushes "as good as new", try dissolving a heaping tablespoonful of Gold Dust in a pail of hot water. Thorough "swishing" makes them clean and sanitary, because Gold Dust so quickly dissolves the grease.

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is made of sulphide Fibre Board with bevelled undercut lath embedded in the molten asphalt mastic under great pressure. It comes in panels 4' by 4', but if longer lengths are required, same will be run on request. Ready to be nailed direct to the studding, lath side out, as a foundation for stucco outside the building or plaster inside.

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Advertise in the FARMER

HEMORRHAGIC SEPTICEMIA OF CATTLE

Hemorrhagic septicemia of cattle is a contagious disease and is due to an oval-shaped micro-organism known as the Bacillus Bovi Septicus.

The disease was first pronounced in Germany in 1879, and is therefore, comparatively speaking, quite new. It was first seen in America in the year 1898, when it made its appearance in Tenessee.

The first outbreak discovered in Canada was in 1902, at a place called Bury, near Sherbrooke, in the province of Quebec. In September 1902, this department requested me to investigate a disease in cattle at Bury that was thought to be anthrax. After a careful investigation I was satisfied that th edisease was not anthrax. Instead, I found symptoms and post mortem lesions similar to those described in the text books as hemorrhagic septicemia. As the disease was then unknown in this country I did not wish to pronounce positively without further investigation.

One year later, in September 1903, I again visited the Sherbrooke district, and, in company with Dr. A. W. Tracy, the local veterinarian, visited an infected farm where we found some very typical cases and positive post mortem lesions. I then had no hesitation in pronouncing the disease hemorrhagic septicemia. From year to year since, this disease has been frequently seen in different parts of Quebec. Some years later it apeared in the northeastern counties of Ontario, then in other provinces, until at the present time hemorrhagic septicemia has been reported in nearly all the provinces of the Dominion. I am convinced that the disease existed in the Eastern Townships of Quebec prior to 1902, and was then confused with anothrax and black quarter.

There have never been any very serious outbreaks in this country; usually from one to three or four cattle have died on the same farm. Occasionally a more severe form is seen, when eight or ten cattle die on the same premises. Fortunately the disease usually disappears in a short time and the same farmer may never have any more losses. It is very possible that the cattle which are exposed acquire a natural immunity, which is nature's way of vaccination, and may protect the animal for the rest of its life. The mortality in cattle which suffer from this disease is very high, ranging from 80 to 90 per cent. or more.

There are certain localities where the disease is most prevalent. These localities, low-lying, swampy lands, are favorable to th existence and perpetuation of the virus.

Infection is introduced into the body principally by the digestive tract, sometimes, however, through a wound on the surface of the skin, or on the membranes (mucous) lining the organs inside the body.

Resemblance to other Diseases

The symptoms of hemorrhagic septicemia vary in accordance with (1) anthrax, (2) black quarter, (3) cerebro spinal meningitis and (4) milk fever.

The sudden death of the animal with passage of blood from the natural openings leads one to suspect anthrax.

The swellings sometimes found on the neck, throat, legs and sides in young animals somewhat resemble black quarter.

The nervous symptoms, as delirium twitching of the muscles, and loss of control of the body, are often mistaken for cebero spinal meningitits.

Other cases present symptoms almost identical with milk fever.

In some forms of the diease therefore, it is difficult for even an experienced veterinarian to arrive at a correct diagnosis during the life of the animal. Post mortem lesions however, are very characteristic in hemorrhagic septicemia, and can be easily distinguished from the above diseases.

Symptoms

First, the animal is rather dull,

The "Guardian" of Your Cream Profits

It is not a bell; nor a speedometer; nor muscle—it's the *suction-feed principle* of the Sharples Separator. Other separators do not have this basic advantage—that is why all sorts of make-shifts are adopted. These merely *remind* you that cream is being wasted—they don't *remedy* it. To get maximum cream profits you must *skim clean at any speed*—and there's *only one way* to do it—use a

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Sharples Milkers—used on half a million cows daily

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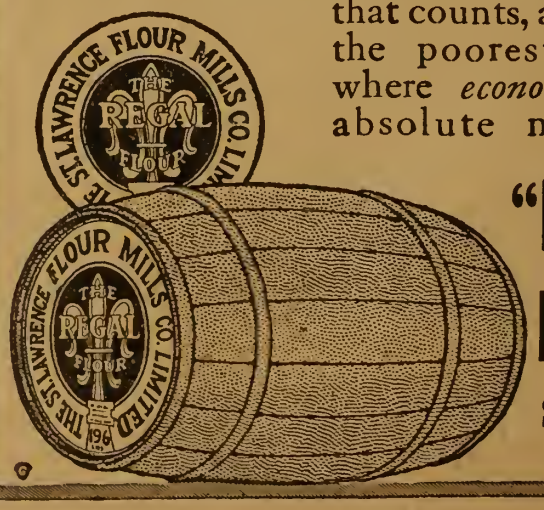

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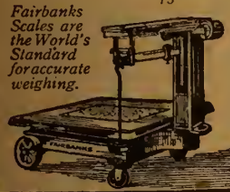

standing with arched back; the tem perature is extremely high, form 104 deg. Far. to 108 deg. Fah., and may suddenly drop to normal. In other cases I have seen a very high temperature just before death, the temperature prior to this being quite normal. Breathing is labored, pulse quick and very weak, and becomes almost imperceptible as the disease progresses.

The manure is very black (tarry) and semi-liquid, and is accompanied by large quantities of clotted blood, and the animal may practically bleed to death by the intestines. This symptom is almost always present, but much more marked in some cases than others.

The animal will sometimes become delirious, push its head into the manger, stagger around or turn round in circles, finally going down and will lie in a stupified condition with the head around towards the flanks as in milk fever; death follows this stage in a few hours.

In other cases there are swellings on different parts of the body, especially in the neck region and the sides. These swellings are flabby and not sensitive. Blood may ooze from the nose and through the skin.

There is a very rapid emaciation. A fat animal will become a mere shadow in only a short time. Death usually takes place in from two to ten days; recovery very seldom.

Post Mortem Appearance

Often-times the first thing noticed on opening an animal is the pale, bloodless appearance of the muscles.

The portions usually affected in hemorrhagic septicemia are the outer (serous) coats of all the internal organs, especially the heart, lungs, stomach, intestines, brain and spinal cord; also the inner or mucous coats of the somach and intestines. The lesions found resemble blood splashes varying in size from a pin prick to large areas, often giving the organ a black, bruised appearance. These areas (hemorrhagic areas) are usually surrounded by a straw colored jelly like substance (lymph). On skinning the animal these areas are often found immediately under the skin, and resemble bruises.

Treatment

At the present time there is no known cure for hemorrhagic septicemia. A great many drugs have been tried, but nthing has proved satisfactorw. Vaccination and serum treatment have proved successful in some cases, but are yet only in the experimental stage.—By E. A. Moore, Chief Travelling Inspector, Health of Animals Branch.

A SEED SELECTION SYSTEM FOR PRACTICAL FARMERS

..If the purity and yield of our farm crops are to be maintained at a high standard it is essential that selection be applied regularly from season to season by the grower. The method does not matter so much as long as it eliminaees the weak, multiplies the vigorous, and removes all foreign varieties. The following is an outline of a recommended system of selection in which there are two essential factors the **seed plot** and the **multiplying field.** This method is simple and efficient and when followed correctly will ensure the maximum of purity and productiveness.

The special seed plot is the nursery of the grain field and sould be large enough to produce sufficient seed, (after the rejected plants and light light grain has been removed) to sow the multiplying field the following season. This field should also be of sufficient size that enough seed will be produced to sow the whole acreage of that particular crop the next year. She size o fthese plots will vary, depending entirely on the productivity of the soil, climatic conditions and the amount needed for seed. For instance, sowing oats at the rate of two and one half bushels the acre, for twenty acres a multiplying block one and a quarter acres in size would produce sufficient seed, if the soil were reasonably productive, while one tenth of an acre would be large enough for the special seed plot.

In the operation of this work the following points should be emphasized.

1. Secure pure foundation stock. **A few pounds of "pedigreed" seed is better than several bushels of an unknown variety.** If you do not know where this can be procured, write to the Dominion Cerealist, Experimental Farm, Ottawa.
2. Establish a seed plot the first season whether you have secured five pounds or twenty-five bushels of "ped igreed seed."
3. Place this plot on the best part of your grain field.
4. Close off every eighth drill and leave a narrow path around the plot so that you may go through and around it without tramping down the plants.
5. "Rogue" carefully, removing ali plants showing abnormal height, variation in shape of head, color of chaft, etc. If thoroughly rogued three times during the season it will be sufficient, although the best plan is to devote to it a few minutes every day or so.
6. Harvest carefully, and thresh separately, preferably with a flail the first season.
7. Fan thoroughly and hand pick the grain from the seed plot the first season. This can be done in the winter time and will remove any foreign varieties that may have got in during the threshing. One person can easily hand-pick a busher a day. With careful threshing after the first season this hand picking can be avoided **except the seed for the seed plot, which should be hand picked every year.**
8. Sow with this hand picked seed the second year, first a seed plot, then sow the remainedr in a multiplying field. The latter should, of course, receive casual inspection, although it proper care has been taken, systematic rogueing should not be necessary.
9. Examine and harvest the seed plot with the same care as the previous year.
10. Clean the threshing mill thoroughly, first thresh the multipyling plot, then the seed plot.
11. Fan thoroughly the grain from the multiplying plot and use this the next season for seeding your total acreage. This means that in the third year after the system is established, you have three distinct lots of grain, the special seed plot, the multiplying seed plot and the main field.
12. When growing nothing else but "pedigreed seed" and without a threshing mill of your own, thresh these three lots in this order, first the main crop, next the multiplying field, and last the special seed plot. nI this way the chances of mixing are reduced to the minimum.

This system is practical and profitable, guaranteeing pure seed and high yields. STUDY IT CAREFULLY, THEN TRY IT.

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DUNLOP TIRES—

"Traction," "Special"—

grip the road. It does not matter where the road is or what it is made of.

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Neither does it matter whether the speed of the car is high or low, because

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are built to meet every shock or twist.

A. 96

SPREADERS OF DISEASE GERMS ON EVERY FARM

Disease germs are easily spread and, as a rule, few precautionary measures are taken to guard against their dissemination. Were it not for this feature, there would be a far greater likelihood of farmers meeting with success in their endeavors to get rid of any infectious disease in connection with their herds and flocks than there is at present, when comparatively little effort is made in that direction.

There are various ways in which disease germs may be carried. One of the most common is in the water supply. Unguarded wells are a prolific source, especially where there is seepage into it from a manure pile, or where the top of a dug well is not properly guarded, and vermin of various kinds find it a death-trap, and their dead bodies are left to decompose and pollute the spring. Outlying and stagnant pools are another source of germ life where myriads of these invisible things live their short lives and die, all the time a menace to higher forms of life that come in contact with them. Other forms of germs simply await their opportunity, enter the bodies of thirsty animals when drinking, get into the blood, or attach themselves to some vital organ, set up inflammation, reproduce their species, and thus cause disease and death. Any body of water may become infected with disease germs. Passing through various layers of earth, however, it becomes purified, hence water from deep wells that are properly protected is comparatively safe for either stock or human consumption.

Food is another common carrier of germ life. Contagion is effected in various ways. One of these is in the purchase of feeding material from market supplies, such as mill feeds that have been handled in a careless manner, mill sweepings, etc. Almost everywhere one goes he is constantly coming in contact with these forms of germ life, and while not all are dangerous to life many of them are, and while in the main commercial foodstuffs are fairly clean, many are not. Home grown feeds should be free from disease germs, and will be so if through careful methods in handling they are not allowed to become contaminated.

Another source of infection is by animal contact. Germs on various parts of the body of one beast may be transferred to another by brushing up against it or breathing in other animals' faces, coughing, scattering germs on litter, carrying them about yards, scattering them over fields, rubbing up against posts or fences, and in various other ways depositing them where other animals doing the same stunts will come in contact with them. This is particularly dangerous when newly purchased animals are first brought to a farm. Such stock should be quarantined for a month or so in order to give any disease a chance to develop, so that one could recognize it.

One of the worst spreaders of disease is the slavering habits of some animals, and which in others takes the form of phlegm or sputa, and is ejected by the mouth and by coughing or spitting, thus becoming incorporated with dust, animal food, mangers, watering troughs, water, fences, posts, pasture, and a hundred over things with which they come in contact. Healthy animals following such individuals are sure to take into their systems many of these germs.

Still another source is that of inflamed surfaces throwing off scales containing germs which get into water and food, or are directly carried to the bodies of other animals by various utensils such as brushes, combs, brooms, cloths, etc. Skin diseases are very commonly carried about in this way, as are also bodily sores from which pus is being discharged. In this connection it may be said that such diseases as cow pox, that attacks the udders of milch cows, are very frequently carried from one to another by the hands of milkers.

Accidents, such as cuts, wounds, or indeed any kind of sore may be a means of inoculation if they are brought into contact with other sores containing germs of a serious nature.

Another source of infection, and one that is little suspected, is that of disease germs being carried into the stable of a herd on the clothes of attendants, and visitors' shoes. Parties in attendance upon animals affected with any contagious disease should in no case visit other stables on the same farm, or the stables of neighbors' farms, or indeed any other buildings, without first changing clothing and shoes, and carefully washing hands and other exposed parts of the person, for in no case can they be sure that they are not carrying about these germs unless this precaution is taken.

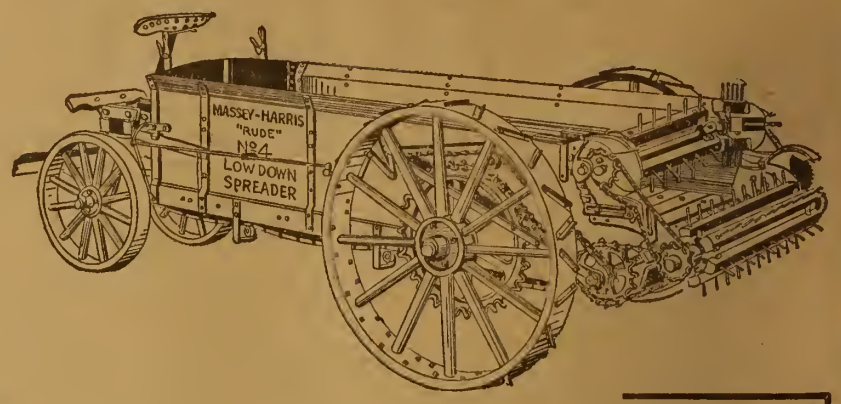
All sick animals should be removed from the balance of the herd and so isolated that there will be no possibility of any contact, for almost as certainly as this is not done, and the disease is contagious, it will spread through the whole herd and cause endelss loss both in time, expense of medical attendance, and in many cases the animals themselves.

The seriousness of contracting infectious diseases in the herds and flocks of our land is not recognized to nearly the extent that it should be, and until stockmen wake up to the gravity of the situation, and the real menace that some of these diseases are, not only to the live-stock of our country, but to that of human lives also, there will be little progress made along the line of extermination.

There seems to be real need of education and legislation along this line at the present time, so that the many dangers from this source will be greatly rduced in the near future, if not entirely overcome.

MASSEY-HARRIS SPREADER

Low Down Wide Spread



Here is a Spreader that is low-down, but not too low—plenty of clearance under the Frame.

It is a Wide-Spread Machine—spreading full seven feet wide, although the Box measures only 3½ feet.

Ample strength is secured by making the Frame of Steel—heavy 4-inch Channel Side Sills with Steel Cross Sills, forming the strongest Frame ever put on a Spreader.

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50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

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Eggs from all heavy breeds such as Bramahs, Plymouth Rocks, Wyandottes, etc., $2.00 for 15 eggs.

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E. F. McKIM, Secretary
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would be a credit to any beef herd.

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Pen No. 1—Exhibition Birds that are layers as good as the best in Canada. Eggs from this pen.....$5.00 for 15 eggs
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This pen imported direct from G. B. Ferris and have individual records of 230 to 264 eggs per year (regular egg machines.) Only a limited number of eggs at ....$2.50 for 15

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Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

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S. C. W. LEGHORNS.

At Fredericton Show 1918, 1st pen, 1st pullet, 2nd cock, 2nd cockerel, 1st pen headed by 1st cock at Sherbrooke, Quebec, 1917.

WHITE WYANDOTTES

At Fredericton Show 1918, 1st pen and silver cup, 1st cockerel in class of 15

15 Eggs—$2.00.

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I will sell either Baron's Own (Imp) No. 15282 seven years old, by Baron's Pride or Kelvin's Pride No. 16262, four years by Baron Kelvin. Baron's Own has been several times Champion at the leading Provincial Shows. Kelvin's Pride has also been a Champion. Apply to James Easton.

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Day-old White Leghorn Chicks, price 25c each. D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for batching..... $2.00 per 15
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We Guarantee Safe Delivery. Terms Cash with Orders

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PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

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Send for price list.

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25000 Older Canadian Boys Have Volunteered

TO HELP THE FARMERS

Last year 7,000 Older Boys demonstrated to the farmers of Canada that they could help take the place of the regular farm help that has gone overseas.

They proved their willingness and ability to adapt themselves to farm work.

This year many farmers are asking for boys.

Already 25,000 boys between 15 and 19 years of age in Ontario and western Canada have offered their services as SOLDIERS OF THE SOIL. The enrollment week for New Brunswick takes place April 28th to May 4th. The plan is to have the boys fill in the enrollment forms which will be turned over to the Department of Agriculture.

The farmers are asked to write to the Minister of Agriculture stating what help they require and for what period.

Arrangements as to wages will be agreed upon by the farmer and the boy.

J. F. TWEEDDALE,
Minister for Agriculture.
Fredericton, N. B.

FRUIT PACKAGES

The fruit season is again drawing near, how about your boxes and crates for the coming season To pack and ship to the best markets, you require the best standard packages, which can be had by placing yopr orders early with the

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HANTSPORT, N. S.

Butter Parchment at Farmer Office

GIANT HORSE-TAIL

"What is one animal's meat is another animal's poison," is well illustrated by the horse-tail weeds, common everywhere in Canada, growing in all places where moisture is abundant and known by several common names.

The horse-tail weed is familiar to most people, but many do not know that the different forms under which it appears are from one and the same plant.

The first stems to appear in the spring are thick, pale and unbranched, have loosely-fitting toothed sheaths at intervals, and cone-like tips which are the fruiting organs containing the spores. The horse-tail is like the fern in this respect for it has no flowers and therefore no seed. A little later other stems are sent up from the same creeping root-stock. These are bushy with slender whorled branches, are green throughout and are merely vegetative. The jointed stems serve to distinguish horse-tail from the true grasses, sedges and rushes amongst which it grows.

One common name given to the horse-tail is "scouring rush." The stem contains a large quantity of silicon or flint and this name has been given, for floors and furniture are in some places cleaned with this plant. Another common name and one of much more importance to farmers is "stagger weed."

It is not generally known that this weed, both green and when dried into hay, is poisonous—one kind to horses, and another to cattle. As a rule, it is the young and the inexperienced animals that fall victims to poisoning by plants. Long years of costly experience have taught wild animals what to carefully avoid as dangerous. What to select in case of illness and what to seek for food.

Domestic animals introduced by man into new countries have to learn fresh lessons and it is their owner's duty to become acquainted with the nature and properties of all plants found in the neighborhood.

The Field Horsetail (Equisetum arvense) is seriously poisonous to horses but does not seem to affect cattle. The symptoms of horsetail poisoning are unthriftiness followed in two or three weeks by loss of control of muscles, swaying and staggering about and finally falling down as the muscular contractions increase in violence. Change of food is generally followed by a rapid recovery. Situations which contain a large percentage of this week should never be used for cutting hay.

While sheep and pigs are not affected by horse-tail, there is one kind (Equisetum palustre) which is fatal to cattle, and similar symptoms occur as in the case of poisoning of horses.

AGE AT WHICH HENS SHOULD BE CULLED

The practice of selling year old hens and renewing the farm flock with pullets is responsible, in a large measure, for the uneven supply of eggs during the year. The year old hen will continue to lay through the molting period and well up into the winter before taking a rest. This means a fair average production at a time when eggs are scarce and bringing good prices. By keeping over the best of the year old hens and an equal number of early hatched pullets, one will secure more uniform egg production during the year, and have better breeding stock than is the case when only pullets are kept in the flock.

By culling the year old flock during the summer or early in the fall, one can make careful selection of the birds to keep over and improve the flock along more intelligent lines than when only pullets are selected. Possibly the rule of disposing of year old hens and getting better results from pullets may hold good with breeds of Plymouth Rocks, Wyandottes and other easily fattened fowls, but with Leghorns, Minorcas and other small egg-producing breeds one should go slow in discarding year old hens that are healthy and have demonstrated their ability to produce.

The cost of hatching and developing a sufficient number of young pullets to renew the entire flock must also be considered although many farmers claim that the extra cockerels raised and sold will pay for the raising of an equal number of pullets. This may be true on farms where the facilities are adequate for hatching and developing large numbers of fowls form which to make selections for the laying flock, but on the average farm it is a puzzling problem to raise enough good pullets to renew the entire flock of layers each year. Late hatched pullets are undesirable for layers, bsides late hatched chicks are more susceptible to diseases and ailments during the hot weather.

Considered from the standpoint of uniform production during the year, as well as from the standpoint of improvement through breeding and selection, the best plan for the renewal of the flock is to keep over year old hens and pullets in about equal numbers. This provides for the renewal of one-half of the flock each year, and makes it possible to dispose of the older birds during the summer and early fall, when prices are favorable. If keut until along in the fall the market is well supplied with fowls and the prices are generally lower. It also makes room for the pullets as soon as they are sufficiently developed to go into the laying quarters. In this way the year old hens will bridge over the season by laying until the pullets begin to produce in the fall and early winter.—W. M. K.

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MANY people do not even yet know that, in addition to the standard GREY finish, the famous Paroid is also made with a crushed slate surface; permanent Red or Green colors. Imagine what handsome effects are possible with these colors.

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The Great Neglect in Sheep Husbandry

Failure to Castrate Ram Lambs Intended for Slaughter

ADVANTAGES OF DOCKING

One prominent writer on agricultural topics has characterized the failure to castrate male lambs as "the great neglect" in sheep husbandry. There is no doubt that this negligence has been a decided drawback to the progress of the sheep industry in Canada. Farmers who are engaged in raising horses do not for one moment contemplate leaving all male offspring entire. Nor do cattlemen forget to castrate bull calves, unless they are intended for breeding purposes. Hog raisers have realized that it is necessary to unsex their grade boars and some even deprive the females of their ovaries, in order to insure the best gains in weight. There is no justifiable reason why sheep raisers should be so careless in this regard. Nevertheless, cold facts demonstrate that, unfortunately, emasculation of grade rams is not practised to the extent it should be. Why castration should be neglected in this class of live stock is difficult to understand. Probably the greater docility of the ram compared with the bull or stallion may afford an explanation. The ram will not break down fences as will the stallion, nor gore attendants to death as the bull. Dire calamaties always impress people. It should not be necessary, however, for deaths to occur before warnings are heeded. Fortunately for mankind, rams are not so ferocious as bulls. If they were, imagine the continual danger which would be the result of the number of entire rams which are to be found in every district where sheep are raised.

Docking is also neglected to fully as great a degree as castration. Both sexes should be docked. The main argument against the docking of horses is that the natural means of fly protection is destroyed. In the case of sheep, this argument cannot be riased, because the tail is so heavy as to prevent switching and, moreover, the heavy covering of wool, which the flies cannot penetrate, makes it unnecessary. On the other hand, the presence of a tail induces the collection of manure, in which maggots may develop.

Reasons for Castration

1. Unsexed lambs are more easily cared for than rams in the field, since they are not so restless and, consequently, do not require as strong fences.

2. Wethers grow and fatten more quickly than rams. Lambs for the fall market are disposed of shortly after weaning and should be in good condition at that time. Where emasculation has been neglected they may, however, not be fit for the shambles. At about three or four months old the lamb realizes his masculinity and proceeds to worry the females in his company and, when separated from them, the males will jump upon one another, paying very little attention to feeding. These lambs should be fattening, but reality shows that the reverse is the case and what is known as the baby fat is lost. A check in growth takes place and it is impossible to hasten the fattening process or obtain the desired state of bloom, unless heavy grain feeding is practised. This means a financial loss either owing to the greater amount of grain which must be fed or to the reduction in price which results from an unfinished condition. Experiment has shown that wethers make 11 per cent more gains in weight under similar conditions than do ram lambs. The negligent sheep raiser does, therefore, pay a severe penalty.

3. Drovers will not pay as much for ram lambs as for wethers. Some markets will accept rams only at a reduced price The reduction made in this respect by the Live Stock Exchange of Toronto is seventy-five cents per head upon all males not castrated.

4. Unsterilized lambs may get into the ewe flock. Sometimes mating takes place, which may be undesirable and productive of heavy financial losses.

5. Castration of males intended for the butcher is a very apparent sign of good shepherding and lambs from a well-managed flock find a ready market, even in times of a temporary market depression.

6. Winter feeding for mutton purposes can be undertaken more successfully with wethers than with rams.

Methods of Castration

Liability to injury or death is the lame excuse which some men put forward when asked why they do not sterilize their male lambs. There is very little risk, however, if the operation is performed at the proper time and attention is paid to the maintenance of sanitary conditions. Castration can best be performed when the lamb is about ten days or two weeks old. At this time a minimum amount of pain is caused. Aged rams, even five or six years old, may be deprived of their testicles with safety, if the operation is performed in a careful manner. An effective disinfectant should be used in all cases. The hands and knife should be sterilized and a little antiseptic placed on the wound, thereby preventing the possibility of infection. Clean pens with repeated renewals of fresh straw are required. If castration takes place when blow-flies are abundant, precautions should be taken to prevent their interference with the wound. This may be done with disinfectant or a little covering of tar. Many shepherds always smear the opening of the scrotum with an ointment of lard and turpentine mixed to the consistency of a soft paste. Any method which will prohibit the ravages of the fly and hasten healing is sufficient.

One of the most common and undoubtedly the oldest form of castration is where one-third of the scrotum is cut off and the testicles drawn out by the teeth of the operator. In this way the operation is performed quickly. Some object to this method, because they deem it filthy, yet many of them undoubtedly relish "lamb's fry." There may be, on the other hand, some grounds for objection through the entrance from the mouth of bacteria into the wound. Removal of the testicles may be effected by drawing them with the finger and thumb, but there is more danger of bursting the testicle in this procedure than where the removal is made with the teeth. A small pair of pinchers can also be used for this purpose. It is better to draw out the spermatic cord which is attached to the testicle rather than cut it with a knife.

In castrating old rams, the entire scrotum and its contents are removed by severing it near the body. Hot pinchers which sear the severed arteries and thus prevent bleeding are used in such cases. There are some who use this method in castrating lambs. An instrument especially designated for sterilizing, known as an emasculator, is employed for this purpose. In using it, the testicles are pressed upward and the lower portion of the scrotum cut off. The cords in this operation are completely severed. Swelling may follow but may be reduced by bathing with a warm disinfecting solution.

Show wethers should have a full "purse" or scrotum. If the entrance is made from the side the size of the scrotum is not diminished. Care must be taken that the opening is near the lower end so as to provide good drainage and prevent the collection of pus. The testicles are removed by the use of emasculators which cut through the spermatic cord.

Reasons for Docking

Manure collects on a long tail very readily and may become a prolific breeding place for maggots. In small lambs whose digestive tracts are unsettled, manure sometimes cakes to such an extent around the tails that defecation is impossible and death results.

2. The tail is useless and the blood which promotes its growth can be better utilized elsewhere.

3. Docking is an evidence of careful shepherding. Buyers leave the neglected flocks untouched until the last.

4. In the case of ewes a long tail is sometimes an obstruction in the act of copulation.

5. Docking adds greatly to the appearance of a sheep.

Methods of Docking

Docking, carefully performed, is seldom followed by bad results. True, a little bleeding may occur when a knife is used, but it does not usually attain dangerous or serious proportions. Generally a lamb when released after docking will run to its mother and commence sucking. This shows that the operation is by no means severe. Bleeding may be prevented by searing the end of the tail or, where the knife is used, by tying twine, which may be removed eight or ten hours after the operation, tightly around the tail above the wound. The most favourable age for docking is, in the instance of ewes, at ten to fourteen days old and, with rams, five to seven days after castration. Castration and docking may be done at the same time, but it is better in the case of small flocks to have an interval between the two operations. The tail should be severed at the third joint of the bevtebrae. Docking should be performed in the morning, so that excessive bleeding will be detected and remedied before night.

There are two methods of docking, firstly, by using a knife, and secondly, by the aid of pincers. The first method consists of placing the lamb between the operator's legs, its rear end in front of him, and of simply cutting through the tail from the underside at the desired joint with an ordinary heavy jack-knife. The joint can be found by feeling on the underside of the tail. The skin on the underside of the tail should be drawn up toward the body of the lamb, so that when the tail is severed it comes down over the end of the joint, which induces coagulation of the blood and facilitates healing. A little disinfectant on the wound assists the healing and prevents infection. The tail may be placed on a board and severed by means of a chisel and mallet, but the knife is more accurate and is not so liable to bruise the tail bones. In the second method, the operator requires an assistant and a pair of iron pincers are used. They are heated in a fire and the operation is performed while they are hot, thereby searing the wound which prevents bleeding. However, pus not infrequently collects underneath the scab which forms, and the suppuration which ensues may cause an aftermath of greater pain to the lamb than the sharp, clean cut of a knife. Of course, danger of infection is more liable from a knife wound, yet when clean bedding and strict sanitary measures are employed this will, to a very great extent, be obviated.

A few extracts from letters follow. These will serve to illustrate the viewpoint of packers, drovers and live stock commission agents with respect to the castration of ram lambs sold for slaughter.

"We believe that one-third of our total receipts of lambs are not docked nor castrated and these practically all come from the northern part of Alberta. Might say that a large percentage of the lambs from the southern part of

(Continued on page 487)

United Farmers of N. B. Hold Monster Convention

Fisher Hall, Woodstock, Would Not Hold Crowd and Gibson Opera House Was Used---Lots of Enthusiasm and Splendid Speeches

The United Farmers of New Brunswick got away to a good start at their organization convention, which opened in the Gibson Theatre, Woodstock, N. B., on Tuesday the 23rd inst. It was at first proposed to hold the meeting in the Fisher Vocational School, but the Assembly room was far too small to accomodate the delegates who assembled from all parts of the counties of Carleton, York and Victoria. It was estimated that 1000 of the leading farmers of these counties were present and the enthusiasm was such as to greatly encourage the promoters of the movement. When it is considered that the organization has only been in evidence since the early part of March and that there are already twenty active working branches, it will be readily understood that on this occasion at least the farmers mean business. Those who are primarily responsible for the pioneer work in connection with the organization are Thomas Caldwell, Charles L. Smith, Gordon Sharpe and W. F. Phillips. These men gave all their time, without charge, and when it was suggested that some remuneration be given them, they unanimously refused to accept compensation for anything they had done. This is the spirit which should actuate all farmers in bringing the United Farmers organization to a point where it will control the public opinion of this province. It is such a spirit of self sacrifice which will overcome all obstacles and prove that the experience of the past, when farm organizations have gone down one after another, will not be repeated in this instance.

The Association has appointed a permanent organizer in the person of Mr. C. L. Smith, who will visit all parts of New Brunswick in his effort to consolidate the interests of the farmers of the province.

The meeting was attended by Mr. J. J. Morrison, of Arthur, Wellington County, Ontario, Secretary of the Ontario branch of the United Farmers. Mr. Morrison gave the delegates the benefit of his wide experience and an excellent address which is published elsewhere.

Mr. W. F. Phillips was chosen Chairman of the meeting. He advised the farmers to get together in their best interests in order to meet the organization of the manufacturers and others. He referred to the organization work that had already been carried on and suggested that the movement was yet only in its infancy. Elsewhere the organizers have been accorded a good reception. From all sides were coming demands for new branches, and the only difficulty had been to find time and organizers to fill the engagements. He predicted that before the next annual meeting there would be a total membership of over 5000. There were no big salaries to pay and no large expense bills to meet. What the farmers wanted was to get together.

Mr. C. L. Smith, who was given a very hearty reception, expressed pleasure at seeing such a splendid represntation of the farmers of the county. Success meant benefits to themselves and their families. It was predicted that the organization would fail, but they were not going to fall down, as farmers they would stand together. He referred to the splendid results of co-operation in Canada, Maryland, Virginia and elsewhere. He thanked the farmers for their reception.

Thomas Caldwell was also splendidly received. He felt that it was the first time that the farmers of Canada had been really interested in co-operation, but he felt that in this venture they had the support of all. He referred to the splendid assistance of Messrs. Smith, Sharpe and Phillips and of their untiring energy in holding meetings at various places. He pointed out that every barber and blacksmith had a union of some kind in which prices were fixed and trade customs adopted. In the Dominion of Canada about 80% of the voters were farmers and if they stand together there was no doubt but that they could control the destinies of this country.

When Parliament met in the fall or the latter part of the winter, they formed a Union Government, which we can all criticize because there is not one separate party, or rather two separate parties, but one big party, and this is I think, the most fortunate time for us to organize. We have never had a government, who considered the interest of the farmers. We have been going after what we need. The manufacturers got word quickly that we wanted the duty taken off farm machinery and they went and asked the government not to take the duty off, and it remained as it was.

We are paying more not only for

(Continued on page 468)

St. John Standard Opposes United Farmers Movement

Ridicules Movement in Its Editorial Column, and in Its Market Report Quotes Prices for Mill Feeds Which Show Direct Violation of the Law--- It Wonders? Let It Be Patient

The following is from the editorial columns of the St. John Standard;

FARMERS IN POLITICS

"The announcement by the United Farmers' of New Brunswick, an infant organization which met at Woodstock this week, that it and affiliated bodies plan to co-operate in buying and selling and also participate in the formation of a new political party in Canada makes interesting reading. The theoretical part of the programme sounds well, but can it be applied practically? The economic phase of the programme has been tried before in Canada and the United States. In some localities it has failed and in others it succeeded.

"Neither is it a new thing for farmers to make an attempt to become active as a body in politics, and there is no question but that they deserve success, if their political policies are framed and propogated in moderation without a bombasic resort to extremes as was the sad case of the Populist party of the United States, which flourished prior to and during the spectacular Bryan free silver campaign. But in this campaign and in the old greenback campaign which preceded it, the agriculturists of the United States were far from being united. The farmers of the middle west and some far western states and in one or two southern states largely rallied to the suport of the Populist cause, and not only elected a score or more of members to congress and several governors, but controlled entire states in the contest for the presidency. The farmers of the east did not support Populist, although it made a strong bid for rural support there."

"Finally the Populists merged with the Democrats and Free Silver Republicans in support of Bryan for the presidency. Now the Populist part is practically extinct."

"These failures are mentioned to show the fallacy of extreme movements and the failure of the farmers to make their movement a truly moderate and national one."

"Regarding buying and selling so as to cut out the so-called middleman that has been tried in New Brunswick, through the Grange, and has failed. Across the border line in Maine a majority of the farmers have a very good organization, by which many of them buy from their association direct at cost price, plus expenses, cash figuring largely of course in the transactions. This plan works very well in the fat years, but in the lean years it does not work as well. Then they are obliged to rely on the country store keeper and produce dealer to finance them partially throughout the balance of the season."

"There is no doubt that the farmers of New Brunswick rely on credit too greatly, but many of them are obliged to use the credit system largely because of the long time between marketing seasons. Many of the large and reliable merchants and produce handlers of the province co-operate with the producers by extending credit and taking produce in payment. This plan is successful in many places, but of course there are bound to be some abuses of the system on the part of both sides."

"More of the cash and less of the credit system would undoubtedly aid all concerned. The selling problem is a difficult one, especially during these times when prices are variable, freight cars and vessels scarce and help short. The Maine potato men tried to solve the selling problem, but they like many others who have tried to do so have failed to solve it wholly to their satisfaction yet. In politics the farmers can be a power if they can get together and stick together, but the conundrum is can they?"

The above article is suggestive of the limitations of the average St. John newspaper writer. To read the St. John daily newspapers one would suppose that the Province of New Brunswick consisted of the City of St. John. In fact, we have often times wondered if the newspaper publishers in that city have not convinced themselves that the Winter Port constitutes the Maritime Provinces.

The difficulties into which the Editor of The St. John Standard has hurled himself may be traced to ignorance of the farmers co-operative movement in Canada. If he had taken the trouble to investigate he would have found that the United Farmers of New Brunswick is merely a branch of the Grain Growers of Manitoba, the United Farmers of Saskatchewan, the United Farmers of Alberta and the United Farmers of Ontario. If he had taken the trouble to investigate the career of this organization, he would have found that there is none of the "old green back campaign" about it. He must be aware that it was the united action of these bodies in Manitoba, Saskatchewan and Alberta which resulted in an overwhelming majority for Union Government in the three middle Provinces. Hon. T. A. Crerar, Minister of Agriculture in the Dominion Government, is the man who originated the movement and who may still be regarded as its head.

We may say for the information of the Standard that a permanent organizer for the United Farmers has been appointed in the person of Mr. C. A. Smith, Woodstock, a gentleman whose standing is unquestionable and whose work in eight weeks has resulted in an organization of over 1000 members in Carleton County, all of whom have agreed to forget that they are grits and tories for a portion of the year at least and work together as farmers. The Standard says "In politics the farmers could be a power if they get together and could stick together, but the conundrum is, can they?" The Maritime Farmer's answer to this question is "Watch them!"

The Standard is laboring under the delusion that the United Farmers are out to wreck every institution in New Brunswick. In this they are mistaken. The United Farmers is an organization designed to look after the interests of the farmers, just as the Typographical Union, which provides workmen to enable the Standard to publish, looks after the interests of those employees.

It is well to note that in the same issue in which this editorial appeared, the Standard's market report carried the following quotations:

Flour

Government Standard	0.00..	$12.05
Ontario	11.95..	12.00
Oatmeal, Standard	(no quotation)	
Oatmeal, rolled	0.00..	13.00

Oats, Feed, Etc.

Oats, per bushel	1.15..	1.20
Oats, car lots, bush	1.10..	1.15
Bran, car lots, bags	48.00..	49.00
Hay, car lots, ton	16.00..	17.00
Middlings, small lot	49.50..	50.00

Considering that bran can be bought in car lots at $37.90 per ton and the Food Controller's excess profit allowed on this commodity is $2.00 a ton, $49.00 per ton for bran looks high. Middlings can be bought, car lots, for $42.90. The Food Controller decrees that a profit of $2.00 per ton may be charged on middlings. Yet the quotation in the Standard is $50.00 per ton. Likewise the price for flour, delivered, war standard, is $11.40 per barrel, and the Standard's quotation is $12.05 per barrel.

If the Standard desires to discharge a useful duty it would send a reporter to Prince Edward Island, to the Annapolis Valley, to the counties of Pictou, N. S., and Antigonish, Nova Scotia, and it would then be able to determine to its own satisfaction that there are some pretty live farmers organizations in the Maritime Provinces. It might also look into the activities of the N. B. Agricultural Societies United, an organization brought into being by the Government, directed by Hon. J. K. Flemming. The Agricultural Societies United in the last three years has handled hundreds and thousands of dollars worth of fertilizers which have been distributed to the farmers at cost through the agricultural societies of this province. The result of the movement is that farmers have been saved as high as $15.00 per ton for fertilizers.

The farmers of New Brunswick need not worry themselves about the article in the St. John Standard. It was evidently written by some person not at all in touch with the political conditions in Canada or of actual farm conditions in the Maritime Provinces. The Maritime Farmer's prediction is that by this time next year the United Farmers of New Brunswick will have a membership of at least 10,000. Long before that figure is reached the St. John Standard will be "whooping it up" for the United Farmers of New Brunswick and telling them what good fellows they are.

Urgency Meeting of the N. B. Farmers Association

Fredericton, April 26th

Upwards of one hundred members of the New Brunswick Farmers' and Dairymen's Association and the United Farmers of New Brunswick, attended an emergency meeting of the Association called by the President, L. M. Anderson, to meet at Fredericton on April 26th, to protest against the conscripting of farm labor, as without efficient farm help, production of food supplies in New Brunswicw cannot be maintained and the increase looked for cannot be realized.

Presidents Address

In calling you together in this Emergency Meeting, I need not offer any extended remarks. You are all acquainted with the further amendments added to the Military Service Act.

TWO QUESTIONS confront the Country—MORE MEN and MORE FOOD. It is now recognized that the one is an extremity equal in necessity to the other.

We are not assembled to engage in controversy—rather to reach an agreement. Nevertheless, we farmers, who have spent our lives on the soil, offer no apology for our opinion on the Question of Food Production. We say to the Government, as earnestly and as sincerely as possible, that already more farmers have been withdrawn from the soil than normal production can withstand. Yet; to-day skilled farmers are summoned from our fields for Military Service. The result inevitably will be a failure of food production.

The Government nad the Farmers agree that throughout Canada a great number of persons eligible for War Service are either idle or not engaged in essential work. The design of the Government seems to be to draft these men to the farms,—while the skilled farmers are to be stripped from the soil.

I am confident that it is the conviction of every farmer that this unskilled and unwilling labor will prove useless and a positive burden and obstacle to our farmers, and that no increase in food production can result from it. It is an impossible task for the farmer to educate or adapt such labor. The farmer has not the power, nor has he the authority to enforce work from those unable and unwilling to perform it. But, on the contrary, Military authority intrinsically is able to direct the man power it enrolls, and to enforce toil and diligence from those subject to it.

Therefore, gentlemen, in my humble opinion, the issue now before us is this:

If Canada is to conscript the man power, which is idle or working in non-essential tasks, WHO shall educate it, harness it, and marshal it to effective War Service,—the Farmers or the Military Authority?—That seems to me to be the question before us.

The first of the week I thought it was time for us farmers to stand together and induce the Government to leave our skilled help with us, in order to produce larger crops than ever. I sent the following telegram to Mr. Carvell:

> "Is it possible that what few expert young farmers are left either on the farms or already in khaki are going to all be taken, and we larger farmers left to depend upon very inferior unskilled help from the Towns and Cities while thousands of htese young men are allowed to stay in offices and at other work in these towns and cities which is far from being as important towards winning the war as the crops that we farmers would be able to grow with the assistance of these skilled young farmers. Why not put girls or young women into thousands of these positions which these young able-bodied men hold in these offices and shops in our towns and cities and thus release the young men to fight. Sir, I make this suggestion as a loyal and patriotic farmer, because I know we cannot produce with this unskilled help anywhere near what we would be able to with the skilled labor.
>
> (Signed) on behalf of the Farmers of New Brunswick
> L. M. ANDERSON,
> Pres. N. B. Farmers & Dairymen's Assn."

The following letter I received in reply:

> "Dear Mr. Anderson,
>
> I have just received your telegram of the 22nd instant re the conscription of farmers, an sympathize with every word you say. The situation of this war, however, has reached far beyond the question of sympathy. The men to whom you refer in cities and towns will be taken just the same as those from the country districts, and while I am sure there will be some loss, yet it is impossible to draw any distinction between country and city.
>
> Sincerely yours,
> (Sgd) F. B. CARVELL.

(I might just say the reason I used the words "cities" and "towns,", Mr. Carvell had used the expression that there were tens of thousands that could be drafted; that is why I referred to it in the telegram).

The President named a Resolution Committee consisting of

Frank Riley, Melrose,
A. C. Fawcett, Sackville,
F. B. Doncaster, Sackville,
Louis St. Onge, St. Jacques,
C. M. Shaw, Hartland,
C. L. Smith, President United Farmers of N. B., Woodstock,
Robert Hickson, Bathurst, and J. T. Prescott, Sussex.

The committee convened immediately and while awaiting their recommndations the following discussion took place on the draft situation.

Mr. Gordon A. Sharpe—Sec'y.-Treas. for United Farmers of New Brunswick.

The man who helps me on the farm has been with me seven years. He takes care of all the outside work and I take charge of the stock. If I lose that man to-day, I cannot replace him, —the men or boys from the town will simply be no good to me. I tried boys last summer and I simply want to say I don't want those boys on my farm this summer. Certain days you could use those boys, but to keep them steadily on the place is simply a waste of money and a waste of my own time in watching them and directing their work.

I think this is one of the most serious situations that could possibly affect the agricultural interests. Instead of taking my man from me two months ago, when I could have hustled around and made some provision to meet the situation, we only hear now when we are ready to start the work. On account of so many men being taken, I consider it impossible to get help on my place and in consequence I will have to greatly curtail my crops this summer.

Mr. Anderson.

I agree with Mr. Sharpe in his remarks and I believe, from our own situation around Sackville, it will be the same and that it will be the same all over the Maritime Provinces. Dr. Robertson, on the 26th of March, stated that it was just possible that in 1919 and 1920 that the farmers,—and not only the farmers but the people on the North American Continent,—would have to kill our live stock in order to feed the Allies and our friends across the water. If that is so, it seems to me there should be something done so that we farmers could produce all we can.

Judson Corey

The Greater Production Committee had at first an up-hill job in getting the farmers interested, but after heart-to-heart talks with the farmers in different parts of the province, they have succeeded in getting an enthusiastic interest. We have taken hold of this with the determination that we will do our full part that Democracy might prosper throughout the world.

After we made these preparations, after men have spent large amounts seed, fertilizer, etc., this Resolution is brought down that takes away the labour to enable us to carry out our plans for greater production. I know in the County from which I come there will be thousands of acres that will never be planted this Spring. Men, impracticable men, men good enough in their hearts, but with impracticable ideas, could not assist us. We have been through the mill. I had to depend on school children and on girl labor throughout the last few years. I take all kinds of labor such as I can get,—but I had last year 150 bushels of buckwheat that laid out in the winter storms. This does not make so very much difference to me, but the British Empire and the cause of the Allies cannot stand this sort of thing. Part of the crops that are planted will become a waste, if this Resolution is carried out,—and it will be the boys in the trenches and the Allies across the water who will miss all this. If this amendment is carried out, not only will there be no increase in production, but they cannot keep up one-half of the average production.

So the question resolves itself to this,—which is the most necessary thing? If men are needed, take us all, old and young; but if the food is necessary all the men in the world will not save the Allies if they are more than 24 hours without food. They must be fed and surely some plan can be conceived which will withhold the operation of this Act so that we can sow and harvest the crop,—for a crop sown and not harvested had better never be sown.

Hiram Manuel.

If the farmer with one or two sons has them called away, in some cases he will not financially be able to stand it. We have to pay a big price for everything and there is many a farmer who wouldn't feel able to undertake to put in a crop, not knowing what the result will be in the Fall. Should the crop prove a failure, where is the mon ey to come from? Last year we were encouraged and induced to increase production. I think nearly every farmer in the province did what he could, they ran heavy fertilizer bills and did what they could. Now it is poor encouragement for a farmer to step out and hire money to put in his crop and not perhaps have any crops when it is time to harvest. It seems to me we ought to do something to save the men on the farms, if food stuff is required. Hired help do not take the interest in farming that our own boys do. I have no boys who will come under the draft, but there are men all around who have. We may find in some instances where they would take the only son of a widowed mother and she would be unable to get help to work her farm. Hired help always expect to get off early when night comes and they will not take the interest their own boys or girls would who hav always been accustomed to farm work.

Before a man can take a gun and go in the trenches he has to be trained six months or a year. Why should a man be expected to go on a farm and start to work without training, than to take a gun and go right in the trenches? I think there should be some way that a readjustment could be made so that we could have our skilled labour left in the country, as long as it is needed for food production. We know tbat a man cannot work when he is hungry and we certainly must produce the food, in order to feed our Allies across the water. I do not want anyone to think that we will not do or best in every way, but as our country is calling for Greater Production, I feel we should have our skilled labor left on the farms.

Mr. R. K. Tracey.

I find that the farmers have been called upon in the last six months to do everything possible to increase production. The farmers have nobly responded, they had good courage and were willing to work almost day and night to accomplish the result we were called on to obtain. We were urged and told the result of the war perhaps depended more on us as farmers than it did on the boys in the trenches. We, as farmers, felt that responsibility. The Government cooperated in every way possible to help the farmer, regarding seed grain, etc., and the farmers were planning on a bumper crop for this season, but, gentlemen, being connected with the distribution of seed throughout Carleton County, I find that the farmers who were clamoring for seed two weeks ago are now hesitating. They say, and justly say, it will be impossible for them to sow the seed and gather the harvest. There are farmers in our locality with boys in the trenches and only one son at home. If those now on the farms are taken, it will mean the older farmers will have to shut down their farms.

They tell you they will furnish city help,—they might just as well train those men for the trenches than to take skilled farmers and put them in the trenches. If you take a skilled farmer from the farm, you have to train him for the trenches, and if you take a city man you have to train him for the farm. It is my opinion they should take the men who should go and leave the men who should be left.

Another thing I cannot understand. The U. S. say they can put 3,000,000 men in the field in one year, if they can furnish ships to transport them over. Why couldn't the same ship that transports the Canadians take over the men from the U. S.? Canada has put the army in the field, it is only fair that U. S. should fill the gaps for a time. What is the use of sending our men over there, if they go there to starve, as they tell us they will if our production is not greater? If with the help we had on our farms last year we only produced a normal crop, how could we be expected to produce 50% greater this year, with perhaps 50% less help? We, as farmers, have been told that we are kickers. Gentlemen, we are not, we are willing to do whatever we can. I, for one, if I can be more benefit in the trenches than I am on the farm, I am ready to go.

Mr. F. H. Crouse.

This must be a very serious matter, or there wouldn't be so many of us here to-day. If the boys are all taken off the farms, instead of increased production, there will be decreased production. There was a man here a few days ago who told us that the farmers should guarantee to produce five acres more than they have produced. I might say right here for our section of the country, it will be from 5 to 10 acres less production and I think that we should move along these lines and see if we can get a guarantee from the Government that this is necessary. If we do not need greater production, it will be a different thing. A boy, up until he is 22, is not much good on the farm. A boy of 20 years of age has to be watched to see how he is getting along.

I know several cases in my locality where the boys should be left. There is one man with 3 boys in the trench-

(Continued on page 492)

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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MAY 7, 1918

DATES OF ISSUE.

May 7-28
June 11-25

UNITED FARMERS UNDER WAY

The organization meeting of the United Farmers of New Brunswick, which was held at Woodstock, on the 23rd and 24th insts., was one of the best gatherings of farmers ever seen in the province of New Brunswick. When it is considered that delegates, nearly all of whom came from the County of Carleton, filled the largest theatre in the town of Woodstock, it will be understood that the farmers are beginning to sit up and take notice.

The object of the United Farmers is to bring into closer co-operation the farmers of Canada. In Manitoba, Saskatchewan and Alberta, where the organization is conducted under two names, the United Farmers and the Grain Growers, the men who till the soil are able to control the political situation in the three provinces and in the Dominion so far as it affects these three provinces. In Ontario, where the movement is of comparatively recent birth, there are already 12,000 members. British Columbia nd New Brunswick are now being organized. The New Brunswick movement had its conception less than three months ago and already the membership has passed its first thousand.

It is the intention of the United Farmers to organize every county in the province of New Brunswick and with that end in view Mr. C. L. Smith of Woodstock has been appointed provincial organizer. He is one of the originators of the movement in New Brunswick and has promised to devote his whole time to the work.

The Maritime Farmer has been appointed the official organ of the United Farmers of New Brunswick. It has no hesitation in endorsing an organization which has done so much for farm life in western Canada. There is no reason why the farmers of Canada should not be represented in the legislatures of the various provinces and in the parliament of Canada by men who have at heart the interests of agriculture and clean government. It is high time that the political machines in this country ceased to turn out millionaires. We have a Union Government at Ottawa, which is demonstrating, in a measure, that the affairs of this country can be conducted without spending millions on graft propositions. As a matter of fact people are becoming tired of the everlasting series of accusations of graft which have been directed by one party against the other.

At this time when men are dying by hundreds of thousands in the trenches of France, people have little interest in "peanut politics." If the farmers of Canada make up their minds to clean up the public life of this country and send a few crooks to the penitentiary they can do so.

The United Farmers of New Brunswick are off to a good start and better things may be expected of this movement than of any other that has been launched in the province of New Brunswick.

INCREASED PRODUCTION

"Increased Production" is one of the factors that will help win the war. Still it is something that cannot be accomplished by talking about it and with help more scarce than it has ever been in the Maritime Provinces farmers will have to face difficulties such as have never confronted them. But that is what the Canadian boys in the trenches have been doing, and after all, those of us at home have the light part of the burden. To see that the men who are fighting are properly fed and clothed is a duty we owe to them. Maritime Province farmers will make every effort to meet the demand for increased production. The wheat acreage in the three eastern provinces will be the greatest in their history. Never before has so much ground been broken for wheat and it will be all badly needed before the harvest of 1919. The outlook for food in this country is more alarming than most men care to suggest. The question of famine is not so remote as many suppose. A bad crop ni 1919 would bring upon us unthinkable disaster. The question that confronts every man and woman in this country is can we produce sufficient food to supply our wants and those of the men at the front. Every person who eats, and we all do, has a vital interest in greater production.

THE HALIFAX GARRISON

We understand that a number of the officers without overseas service have been removed from the Halifax Garrison. However we are informed that there is still a large number of men filling officer's positions in Halifax who have been there since 1914. At the same time there are in Canada hundreds of qualified officers from the trenches in France, who are unable to find employment. We have at Ottawa a government elected to conduct the affairs of this country on a war basis and the Maritime Farmer has no hesitation in saying that all officers in the Halifax Garrison who cannot show overseas service should be fired. There should be no further delay in cleaning up the awful mess which exists in that city. There is only one place for a man to wear khaki and that is in France, provided he is physically fit. Men who have been wearing khaki since 1914 and have never seen duty outside of the garrison walls of Halifax should hand in their resignations or the government sould discharge them at once.

An employment law has just been passed by the Dominion government in which provision is made that "every male person residing in the Dominion of Canada shall be regularly engaged in some useful occupation." The Maritime Farmer would suggest that some of these heroes of the 1914 "Home Defence" class be taken out and put to work on the farms of Canada. They would then be giving their country far better service than at present and the government would be saving thousands of dolars, which is necessary at this time. To suggest that men from overseas are not fitted in every way to dicharge the duties connected with the Halifax Garrison is to offer these "real fighting men" a gratuitous insult.

It is time for further radical changes in connection with the Halifax Garrison.

NO LOAFERS ALLOWED

The Dominion Government has passed a most drastic law in regard to loafers. Any man who refuses to work is liable to a fine of $100 and costs or imprisonment for six months. There are in the Maritime Provoices men who have not worked and who will not work. They are to be found in the towns and in the country places. Every municipality has a right to see that men living within its jurisdiction engages in some useful occupaton. It is an excellent law and one that should be enforced to the letter. Men who refuse to work voluntarily sould be made to take up their part of the Empire's burden.

The order-in-council providing for enforced occupation to all males in Canada is as follows:—

1. Every male person residing in the Dominion of Canada shall be regularly engaged in some useful occupation.
2. In any proceeding hereunder it shall be a defence that the preson is.
   (a) Under sixteen years or over sixty years of age.
   (b) A bona fide student proceeding with his training for some useful occupation.
   (c) A bon fide student in actual attendance at some recognized educational intitution.
   (d) Usually employed in some useful occupation and temporarily unemployed owing to differences with his employer common to similar employees with the same employer.
   (e) Physically unable to comply with the provisions of the law as herein enacted.
   (f) Unable to obtain within reasonable distance any kind of employment which he is physically able to perform at current wages for similar employment.

* * *

A thorough cleaning and white-washing after cattle are on pasture means greater comfort and fewer flies about buildings all summer.

* * *

Growing mangels, turnips and carrots for seed is very simple and does not require special skill or capital.

* * *

It will pay to collect and burn all brush from the clearing of land, prunings from the orchard, and other waste woods that may be about the farm and wood lot and save the ashes.

* * *

Do your present barns not need more light, better ventiation, more sanitary floors or some repairs? Some of this work may be preferred on rainy days.

* * *

As never before, rainy day jobs must be planned this season, so that they need not be done while the weather is favorable for any other line of work.

* * *

Owing to the urgent demand for increased food production, the scarcity of labor and the high price of materials it is doubtful if very many new farm buildings will be erected this year. We believe it would be advisable, however, for many farmers who have no silos to plan for one and grow bumper crops to fill it and thus help out the sortage in mill feeds.

Lime and Its Uses in Agriculture

Lime in Agriculture

During the last few years there has been a great deal of interest taken in the question of applying lime to farm lands. Yet many farmers appear to have no common understanding of soil acidity, its causes, its effects, tests which may be made in the field, what materials may be used to counteract it, and many other points in connection with this question.

It must not be thought that all soils are acid, for some, by reason of their origin, are well supplied with lime. These are almost invariably strong, productive soils, and stock fed on their crops are thrifty, with plenty of bone. On the other hand, large areas of land are just as naturally poor in this constituent from the outset, and under cultivation, the supply is soon so reduced that there is not enough of it to do the work which has apparently been assigned to it in crop production. Stiff clays and wet, low-lying and ill-drained soils are apt to become sour, probably due to the fact that there is little chance for the acid materials found in the soil to drain away. Such soils should be drained first and then lined.

Combined with the fact that some of the soils of the Maritime Provinces are sour and that the natural changes taking place in any soil tend in that direction, we have the other fact that few, if any, of our farm crops can make their best growth in a soil carrying a poor or insufficient supply of lime. In the case of legumes an abundance of lime is essential. In fact it is probable that the frequent faliure of clover to come through the first winter is due to lack of lime in the soil.

Lime has three main actions in the soil, it neutralizes the acids formed, it improves the physical condition, and it is apparently essential for the proper development of certain plants and organisms in the soil.

How Soils Become Acid

The acidity of a soil is due to the presence of acids or acid salts, and they may be either organic or inorganic. We are familiar with the fact that sweet immature corn makes sour silage, sweet cider ferments to vinegar, and that sweet milk will sour. In a similar manner organic matter such as green manures, crop residues, and farm manures undergo fermentation or decomposition in the soil and produce acids. If this acid is to be counteracted or neutralized, there must be some material of an alkali or basic nature present to combine with the acid and form a neutral salt and thus destroy the acids formed. This is one of the functions of lime in a soil. If the soil is naturally poor in lime, or has been depleted of its natural store of lime, the soil will probably be sour.

The natural chemical changes that take place in a cultivated soil tends to bring its soluble plant food constituents into a soluble form. These changes are essential to render the food available to the plant. But, among these food constituents, lime, at least, is rendered soluble faster than is necessary for food purposes. Naturally, unless it is again taken up in an insoluble form, it must gradually be carried downward with the water that sinks into the soil. For this reason the water of wells of many springs, and of our rivers is hard and limey. For the same reason a subsoil contains more lime than a surface soil, and the latter may become so leached that it does not contain sufficient lime to neutralize the acids formed in the decay of the organic matter when the soil becomes acid or "sour." It is well to remember that the richer the soil is in decaying vegetable matter and the more thorough the cultivation, the faster the lime will be rendered soluble and leached away. For the same reason, the longer the land has been under cultivation, the more likely it is to need lime. Thus it is many years since some of the lands of England and Scotland needed lime. The same is true of much of the land in the States to the south of us, and now our, comparatively speaking, newer lands are reaching the same condition.

During a season's work on soil survey in Ontario, abundance of evidence was produced to show that these changes had progressed far enough to render the application of lime a necessity in many districts. In the course of the summer's work thousands of borings were made in the soils of the counties studied. In most cases the surface soils were acid to litmus paper, and there was not enough carbonate of lime present to cause any apparent effervescence until a depth of 20 to 24 inches was reached. In some cases there was none even at 40 inches. Surface soil rich enough in carbonates to give an effervescense with acid was found in comparatively small areas. On such a soil it would naturally be useless to apply lime. In some other places the soil is not yet in need of lime, but the supply is working downward, while in other districts, there is great immediate need.

Many inorganic fertilizer materials tend to increase soil acidity. Thus sulphate of potash, muriate of potash, and sulphate of calcium, or land plaster, are neutral salts; but the basic part of the salt (potassium and calcium) is taken up by the plants more rapidly than the acid radicle, and the soil becomes sour. Ammonium sulphate has this effect in a double sense, because the nitrogen in the basic part of the compound, ammonium (NH_4), is nitrified in the soil to nitric acid and both parts of the original substance furnish acids.

Lime Improves the Physical Condition of Soils

But the addition of lime does a great deal more than simply neutralize the acid of a soil. It influences the tilth or texture of a soil. This is most marked and most beneficial in the case of clays and clay loams, rendering them less tenacious when wet, and more friable and mellow when dry. This it does by causing the fine particles of the clay to gather into larger units and makes the soil act more like one made up of larger patricles. This flocculation can be readily shown by carrying out the following experiment: Take two glass cylinders or jars, and place in each about a tablespoonful of clay soil, and nearly fill with soft water. To one cylinder, or jar, add about a teaspoonful of slaked lime, then mix thoroughly the contents of each jar by shaking and turning upside down and shaking. Allow to stand and settle. Note the difference in the size of the particles and the rate of settling. The flocculation does away with the stiff, waxy, impervious nature common in clays deficient in lime, and renders them drier, warmer, better aerated, with a larger content of moisture available for plant growth. It also brings about a more favorable condition for root development; improves drainage and permits the farmer to cultivate his clay soil earlier in the spring with all the advantages that naturally folow.

The action of lime on sandy soils is somewhat similar to that on clay, that is, it binds, or cements, the sand particles together; but the effect on the soil is different. It renders the soil closer in texture, and thus, being less open and porus, it does not dry out so readily in seasons of drought.

Lime Liberates Mineral Plant Food

In addition to neutralizing the acid of soils, and improving their physical condition, lime is also credited with causing certain chemical reactions in the soil whereby the inert potash and phosphoric acid are brought into an available form. In fact, the carbonate of lime appears to be the main-spring of many beneficial reactions occuring in the soil. Most of our soils contain immense quantities of potash in an insoluble form. Through the action of lime compounds these insolube potash compounds are broken up, the lime taking the place of the potash which is liberated in a form that plants can assimilate. In this way lime compounds may act as an indirect potassic fertilizer, which gives lime a double value at the present time when potash materials are so scarce and expensive. This effect is naturally most noticeable on clays, and more particularly with clover and other leguminous crops which have the greatest difficulty in securing their supply of potash from the soil.

Phosphoric acid, is largely held in the soil in combination with iron and aluminum in compounds, that are very slowly rendered soluble. The lime reacts with these with the formation of phosphate of lime which is more readily rendered available to the plants. Thus while lime does not directly supply either potash or phosphoric acid, it does help to bring that which is in the soil into an available form. Furthermore, it is generally considered that soils destitute of lime have little power of retaining plant food constituents when applied to the soil as fertilizers in the form of salts of strong acid.

Micro-organisms in Soils Cannot Develop in an Acid Soil

Thus far we have credited lime with neutralizing the acid of soils, improving the physical condition, and liberating mineral plant food from insoluble forms of combination. But it has still other uses in the soil. A soil worthy of the name must contain a supply of decaying organic matter, humus, or huums-forming material, which is the source and the storehouse of nitrogen, the most important and the most costly element of plant food. In this form, however, the nitrogen is not available as a plant nutrient, the material must undergo further changes with the formation of nitrates. The process by which this is brought about is known as nitrification, and is the life work of certain vegetable micro-organisms or bacteria within the soil. As these nitrifying organisms flourish only in a neutral, or rather slightly alkaline soil it is essential that some such substance as lime be present to neutralize the acids that are formed in the decay of the organic matter. The nitrate of lime thus formed is the principal direct source of nitrogen to the plant.

Then, there is another class of bacteria whose function is to fix atmosphere nitrogen within the soil. This is one of the micro-organisms which Professor Bottomley claims performs such an important function in his "Humogen," which has recently come into prominence. These organisms known as Azotobacter, are, so far as we know, present in all fertile soils. They have, apparently, a very important function to perform in adding to the soil's store of nitrogen, a function they cannot perform in an acid medium. Hence, again we have a reason for the use of lime.

A third class of bacteria important in agriculture is the nitrogen gathering bacteria associated with the legumes. The value of this agent in increasing the productiveness of soils is now well recognized; but it, like the other classes of bacteria mentioned, cannot perform its important function in an acid soil. This is doubtless one one of the reasons why an application of lime so beneficially influences the growth of legumes.

Taking into consideration, then, all the important functions which lime has to perform in the soil, and the fact that our soils are steadily losing their lime, it is evident why the application of this material is so important. Fortunately, we have abundance of the lime in our own country, and it is not a costly material.

How to Test for Acid in Soils

Many methods have been devised for determining the amount of acid in a soil, but none of these are suitable for field use. In most cases, it is sufficient to ascertain the fact that the soil is acid. For this purpose a fairly satisfactory test can be made with blue litmus paper, which can be purchased at almost any drug store. It is sold in sheets or in little "books" which contain about twenty-five or fifty strips of the paper about one-half inch wide and two or three inches long. This is the most convenient form in which the have the test paper. If the sheets are purchased, they may be cut into strips the size of those in the books and placed in a clean, dry, wide-mouthed, well-corked bottle to keep them from acid fumes. When this paper comes in contact with an acid it turns red.

A very simple method and a very satisfactory one in our experience of applying the test is to make a ball of damp soil, break it open and lay the paper on the broken surface, squeeze the parts together again and allow to stand for from five to ten minutes. If on opening the ball, it is found that the blue paper has turned red, the soil is acid and in need of lime. It is apparent that the hands must be free from acid and the soil damp enough to press into shape. Unless the soil is very dry, we have usually found that by getting a sample three or four inches below the surface there was enough moisture to answer the purpose. If the soil is moderately dry the change in color may appear only in spots and greater pressure or longer time may be needed to make a satisfactory test. The rapidity of change and intensity of color developed indicate to some extent the relative degree of acidity. To overcome accidental difference in the soil, the test should be repeated several times with samples taken from different parts of the field. In Bulletin No. 80, Dominion Experimental Farms, Ottawa, Dr. Shutt describes two methods which are not difficult to carry out, and may give more reliable results, especially where the soil is dry. These results are as follows:—

1.—"Take up, by means of a spade or trowel, a little of the surface soil from, say, half a dozen places on the area to be examined, and mix well, using the trowel or a clean piece of board. Do not handle the soil. Take a small quantity (a few ounces) of the mixed soil and, putting it in a clean cup or tumbler, pour on a little boiled water, and stir with a clean piece of stick or spoon until the mass is of a consistency of a very thick paste. Into this "mud" press o piece of blue litmus paper by means of a small stick or the back of a knife, inserting the paper until one-half to two-thirds of its length is within the pasty mass. At the end of fifteen minutes, carefully draw out the paper and note if the part that has been in contact with the soil has turned red. If so, the soil is acid."

2.—"Place a strip of blue litmus paper in the bottom of a clean, dry glass tumbler (preferably flat-bottomed) and over it place a round "filter paper" (purchaseable at a druggist's), or, if such is not readily obtainable, a piece of clean, white blotting paper cut to fit the bottom of the tumbler. On this put a few ounces of the soil to be tested collected and mixed, as already described, and pour on sufficient boiled water to moisten or wet the soil thoroughly throughout its mass, but no more, and set aside for half an hour or longer. To examine the litmus paper, the tumbler is invested; viewed through the bottom of the glass, its color will be well brought out against the white filter paper. As a check and to ensure that any change in color may

(Continued on page 484)

THE UNITED FARMERS OF N. B. HOLD MONSTER CONVENTION

(Continued from page 464)

machinery, but on Ford cars, as they cost one hundred dollars more in Canada than they do in Maine. Does it cost one hundred dollars more to make a Ford care here than it does in Maine? They can buy machinery cheaper in England than we can at the end of the factory. Why is it? Simply because there is a duty on machinery coming into Canada. As I was saying, we are paying this duty and the manufacturers are putting it in their pockets.

Regarding duty on mixed fertilizer, there is a ten per cent duty on two dollars per ton more here than in the state of Maine, because the duty is put on by the American firm who ships it in here.

The balance of farmers in this country want the duty off farm machinery and fertilizer. The government does get some revenue from the duty on fertilizer, and ther has been a good deal of American fertilizer. American firms are coming here to establish fertilizer factories next summer and when this is done we will cease to get any revenue from the duty on fertilizer. Why should we pay the duty into the manufacturers' pockets?

You have heard that the United Farmers movement wont last. It can't help but last if you get behind it and stay with it, but if you flunk the first discouragement you get then it's all off, but if you stay behind it you cannot kill it. Eighty per cent of the voters are farmers. Now I will show you three ways by which you will kill this movement.

The very first is lack of interest, At first you are interested and take it with a hurrah, then you are apt to become discouraged, and let yourself become disinterested. Secondly, you have to keep politics out of this. If not, you will split it. I might say we should be farmers first and politicians after, but it is better never to be a politician if you cannot keep politics out of the whole affair. We do not want things the way they were before. We want to elect twenty-five farmers at Ottawa. If we want the duty off farm machinery then we can get it, if you can form an independent party and have our own representatives elected to represent the farmers and report to the farmers and look after our interests. We could be the balance in power. If we slip off into this two party business we will be as we were before.

The third thing; should this organization start out like anarchists, we would be doomed. If you want anything wait until a meeting is called and discuss what it is you want; should it be the duty off farm machinery or anything else, find out what it is and decide definitely

If we think we want an independent party we had better decide long before election.

When this organization first started we were represented at the Farmers and Dairymen's meeting at Fredericton. When we got there we found that the report had gone ahead that we were coming to agitate. We were not very much pleased with the report that had gone ahead and were amazed. We went and saw some of the heads of the meeting and explained our errand and whey they found out why we were there, they treated us royally.

Mr. A. H. Margison of Centreville was asked to speak but begged to be excused.

Mr. J. J. Morrison, of the Arthur, Ontario, said:

Mr. Chairman and Gentlement, perhaps I should say fellow farmers, because when I look into your faces I see that you are, and see that you are men who have earned all you have and more. After listening to the previous speakers I feel that I would like to sit still and listen. This is the same sort of stuff as we want in Ontario. I did not come here to make a speech, I came here to have a heart to heart talk with my fellow farmers as I have had the privilege of doing in the other provinces. It takes a lot of determination to make this thing succeed—men in dead earnest—farmers in dead earnest. The time has come to organize.

While I am Secretary of the United Farmers of Ontarioo I am here to represent the united council of Alberta, Saskatchewan, Manitoba and Ontario, and I hope we will be able to add New Brunswick and Nova Scotia. I am here to extend a greeting to you and to enthuse you if possible. We must present a solid front to the opposition. Men say they are keenly interested in us, not to keep us from being robbed but to keep us quiet while we are being robbed.

In Ontario, four years ago, we took two days and a half to organize. You were going to try to do it in a day. Now you have a lot to do. Part of your work may be already done and you have been doing noble work, but you will find there will be a great deal to do after today. You must leave politics out of this and use common sense or just plain horse sense. That's the best kind of farmers politics. Mr. Caldwell said that we had a Union Government and this would be the best time to start. I was speaking to a man in Toronto and he asked me if I had the eight hour day system introduced in my farm. I answered "yes". I said I had eight hours in the morning and eight hours in the afternoon.

We must be sure and not allow ourselves to become disinterested. It is really the fact that we are so busy making a living that we have not time to think. My old father said the proper way to keep the cows in the field was to give them enough and not too much. If they didn't have enough they starve, and if they have too much they would be looking for fences to break down.

If you allow partizan politics to come between you, I am afraid your organization will come to an end. The first vote I gave was to kill my father's. We went to the polls together. What was the trouble? Lack of education, lack of information and everything else. There are two farmers, Tom Smith and John Jones; in this case we will let Smith be the grit for awhile. They live side by side, are the very best of friends, help each other when one is sick the other does his work. Election day comes and a difference creeps in. They go to the polls, not together but by roads in different directions, and they do the very best they can to kill one another's vote, and kill one another's interest. What is the trouble? Partizan politics. And so as in that case partizan politics will kill your interests. When we first came to this country the Indians inhabited it, but the shrewd white man wanted the land, so he set the Indians on one another. They killed each other off and now the white man occupies the lands today. The farmers are like the Indians in one respect. They get their living from the soil, but do not let us be like Indians in the other respect, and fight among ourselves. It is impossible to progress under such condi-

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tions. We have allowed politics to drive us too far, and our industry has been driven to the ditch. It is a bankrupted industry today. Do you have to exhort men to make munitions? No, only agriculture is the bankrupted industry and does not attract enough men to do its own work. In Ontario last year, there were not enough men to take off the produce. This is a humiliating condition and our own fault. We have put the reins of the government into the hands of the other fellow. In the west the farmers control the government, in Saskatchewan, in Alberta and in Manitoba. And if we stand by them we will control the government in New Brunswick. A man in Toronto, in 1914, had been a grit for about twenty five years, but when the Government changed he bolted and got a good position, and now he is ready to bolt again if there was any sign of the government changing. This man sent for some of our men and said "You men are getting prominent in Ontario, and we think we should consider you and appoint a man on the commission to represent your industry. We would like you to name the man you want." I didn't take all he said at par value. He said "If you would nominate a couple so we could decide." I thought to myself, now if I nominate a grit, there will be a good reason for turning him down. So I did nominate a Conservative, Col. John Fraser, who had been a candidate in Brant, and one with whom we would be absolutely satisfied. Then I nominated Mr. E. C. Drury, a graduate of the Guelph Agricultural College, and I said "if you see fit to appoint him we will be happy." He said, "I am sorry Morrison, but that is not the kind of a man you want. You want a big business man who will do something for your industry. Just let me nominate one." And guess who he nominated? J. W. Flavell. He still has the appointment and has never resigned. We farmers never knew nor cared. Do you suppose that the labour men would have stood for the appointment of that man as their representative. Not on your life, because labour is organized. They know they can put any thing over on the farmers.

There was a member of the cabinet going to Toronto and I asked him to appoint a member of our organization to a certain office. When I spoke to him about it, he said "how many farmers in the province of Ontario give a damn who is appointed. They neither knew nor cared. We are just willing to drift and the politicians know it." What is the matter with us that we are satisfied to toil sixteen hours of the day and let the other fellow get the booty.

There is something wrong. We have laboured so long and hard that we are very apt to become discouraged. Once I heard a fellow say he had a cow that was so poor he didn't have energy enough to brush the flies off his own back. Are we in that condition? There were a number of fellows in an asylum and only two guards and I said, "I should think that you would be afraid," and they laughed at me and said, "Well you know crazy men never organize." Surely we are not in that condition. A man said to me this afternoon, "They will never get organized. They will run away at the first discouragement." It is only the barbarians that run away and cannot organize. The manufacturers association have only three thousands members and they have more power than any other organization in Canada. They prevented taking off the duty on agricultural implements. You have not heard anything more about it because the manufacturers went to Ottawa and it is probable that you will hear nothing more about it. However, you have the daylight saving now to help you work longer.

One thing more I would like to ask, "Is this a hopeless case? Are young men going to stand for it? They are not going to stand for this thing. They are getting tired .

They have a test in the asylum to

(Continued on page 488)

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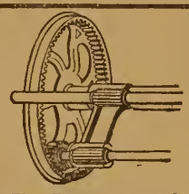

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DAIRYIN.G

GIVE THE BULL A CHANCE TO GET HIS QUALIFYING DEGREE AS A HIGH TESTER

Pictures and names of world's champion dairy animals are common. Below the picture the record of the individual is usually given. To explain what this record consists of and the conditions under which it was made will clarify the popular atmosphere on the question of what constitutes greatness in a dairy bull.

Some bulls are great through their ability to carry off the blue ribbon wherever shown in competition with other bulls of the same class and while such an individual is truly great, there have been cases whree the individual was neither the get of good ancestors nor the getter of outstanding progeny.

There are other great bulls made so by great masters who understand the art and science of advertising, but again this criterion of greatness does not always show the true value of the bull inasmuch as many of the world's greatest individuals have been lost before their greatness was known. Then. there can be no doubt but that a great many bulls have gone down to oblivion because they were always used on grade cows or because their daughters were owned by dairymen who did not believe in official testing.

Most bulls now known widely have. however, achieved fame because of the fact that their daughters were uniformly good milkers. In some instances this capacity to convert feed into milk has been handed down from the sire to the third and fourth generation of females. King Segis (86-75-46). The figures in the parenthesis are like so many hieroglyphics unless one understands them. Properly constructed they tell tales of greatness. They mean that King Segis had eighty-six daughters which were tested officially and came up to the requirements set by the breed for their age. King Segis had also seventy-five sons, each of which had sired at least one daughter that was tested officially and came up to the requirements. Out of his eighty-six tested daughters forty-six of them had heifer calves which became cows that came up to the breed requirements as shown by the official test.

What is a tested daughter Some breeders believe there exists a hokus-pokus about feeding which makes it possible for these cows to come up to the standard, hence they have no faith in the test and never try it. The idea is. however, far from the truth for many cows have made exceptional records with very ordinary methods. Moreover. it ma ybe said in candor that some record cows are fed rather elaborately . In great contrast, however, attention is called to the fact that many cows are fed elaboratetly. yet never come up to the breed requirements because they do not possess the inherent capacity.

How a Cow Is Tested

To show how a cow is tested. we will assume Jim Jones to own o cow that he believes capable of coming up to the association's requirements. He writes to the secretary of his breed association giving the name and number of this cow and the approximate date on which she will freshen . This information in turn conveyed to the state department charged with supervising these tests. As soon as the owner notifies the state department that the cow has calved, a tester is sent to start the test; he comes unheralded. He must be at the farm at least one milking period before the test commences and at this time he satisfies himself that the cow has been milked dry. At the next milking, the tester weighs the pail, sits in full view of the attendant while the milk is being drawn, then takes possession of the pail. contents and all. weighing the same on a pair of scales he brings with him. This weight is recorded in the tester's private record as well as on the stable milk sheet.

After the milk has been poured back and forth from one bucket to another four or five times, the tester dips out a pint or half-pint sample. Out of this he takes enough to make the Babcock test; likeswise he takes out an amount proportionate to the total weight of the milk produced. This last sample enters into a sample containing a portion of the milk at each drawing. This sample is called a "composite" one and is sent to the state institution supervising the test in order that the tester's averages may be verified.

This procedure goes on for seven days or as long a period as the owner wishes. Each milking is carefully weighed and tested and the official results are those which the tester comtests. This is what is known as an official test.

The semi-official test is one that is usually conducted for a year and the weights and tests are taken two days out of every month. seldom the same two days in the month. The tester shows up wihtout warning. weighs and tests the milk as in an official test and the fat percentage for the whole month is computed on th eaverage of the two days. If the weights given by the owner of the stable sheet do not materially differ from the general run of weights which the tester finds when he comes to the farm, the breed association usually takes the weights reported by the owner. This is called a semi-official test and is by many breeders given more credence than the official test because it shows what the cow can do over an entire lactation period rather than for a little spurt when she is at her best. Both tests are good, however, and the short-time test has the advantage in that it can be conducted a little cheaper. At the same time, it shows what the cow is capable of doing when up to maximum speed.

A point rarely mentioned is that practically all of these high-record cows are milked three times a day. Some breeders claim this to be impractical and hence should be discontinued. but the fact is that a cow high in milk will produce enough more to pay for the added time incurred in making one or two extra sittings.

Bulls receive their Ph. D.'s when their daughters can qualify under these rigid and searching reuirqements. "By their fruits ye shall know them" applies to bulls as well as men, and under these conditions the truly famous bulls of the dairy breeds are so because they have been able to leave their impression on the dairy cattle of countless generations to come.

THE TRUTH ABOUT MILK

Under the above title there appeared an interesting and authoritative article by Dudley Harmon in the March issue of the Ladies' Home Journal. We congratulate the author and the editors on giving their readers some real information concerning milk and as they express it. "while it is high, yet it is cheap."

Dairy and farm publications have published much on this subject. and it has been valuable in educating the producer, but it is the consumer who must be reached. If we want to reach that consumer, if we want to protect the dairy industry and save the caves, let us devote our money and our time to advertising in the publications that reaoh the consumer and educate the editors of these publications so they may speak understandingly of the subject.

If you haven'e read Mr. Harmon's article. get it. read it, and show it to your neighbors and your friends in the city. Here are a few sentences chosen at random:

"The cause of food conservation for ourselves and our allies will be helped if we all use more and more milk and milk products."

"Do you know that milk is not merely one kind of food, but a combination of all the food essentials required by the body—particularly of the growing child?"

"A greater demand at home for milik and milk products will stimulate increase in cattle herds. and we may thus contribute a part toward the restoration of the depleted meat and dairy stocks."

"There has been, and is. something wrong indeed, but the question of just what is the matter cannot be answered

Not made over—
Not added to—
Built right, basically

That's the Sharples Suction-feed Cream Separator.
No loss-alarm tacked onto it to remind you to turn faster.
Sharples *skims clean at any speed,* so it is not necessary to put on a contraption to prod you up to a fixed speed. You can judge how important this is when tests show that 95 per cent. of all separators are turned under speed much of the time, causing a waste averaging 10 pounds of butter per cow yearly. Sharples *saves* all this—*automatically.*

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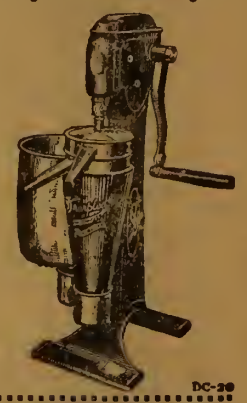
CREAM SEPARATOR

The skim-clean-at-any-speed principle (suction-feed) is built into the Sharples, just as Nature built teeth into you. When you don't have any Nature-teeth, store-teeth are better than none, but they never measure up to the built-in kind. Think that over! Sharples construction has also eliminated troublesome discs—the simple tubular bowl containing but one piece. There are only half as many parts as in other separators — that's why a Sharples lasts longer than any other. Write for catalog to nearest office, addressing Dept. 79.



Toronto, Ont. The Sharples Separator Co. Regina, Sask.
The Lounsbury Co., Newcastle, N. B.
J. Clark & Son, Fredericton, N. B.
Distributors through all their branches

DC-20

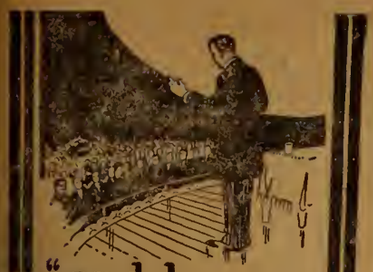
Invaluable on the Farm—

Everjet
Elastic Paint

A lustrous, black carbon paint that combines the qualities of cheapness and durability. Without an equal for use on metal, wood, rubber roofings and all exposed surfaces. It is a bituminous product and is elastic, adhesive; will not rub, peel or scale; will not become brittle and crack; is impervious to moisture; can be used in any climate; resists all action of acids, alkalies, gases, steam vapors, etc. All metal surfaces should be protected against rust with Everjet. Get a can to-day.

THE BARRETT CO., LIMITED
(formerly The Carritte-Paterson Mfg. Co., Limited)
ST. JOHN, N.B.
HALIFAX, N.S.
SYDNEY, N.S.

Ad. No. 2



—"and be sure you use

Windsor Cheese Salt

Made in Canada

THE CANADIAN SALT CO., LIMITED.

248

by accusing the dairy farmer and the milk distributor of robbing the public."

"For the welfare of the nation's children continuation of normal amounts of milk in their diet is imperative; for adults it is most desirable. The higher prices are, generally speaking, truly justified. and our national interests in the war require a liberal encouragement. in every way, of the cattle and dairy industries."

HOLSTEINS BEST FOR ECONOMICAL REASONS

Economy has become the watchword of the whole world and the dairyman-farmer needs to know exactly what each cow consumes and what she gives back in return for that feed. It is a simple matter to weigh up the feed and enter it in a ledger or on a sheet of paper; then weigh up the milk from each cow every day and total up at the end of a week the cost of the feed and the money received for the milk. In the course of a month or two there need be no difficulty in discerning the money makers and short work should be made of any cows that are found to be actually money-losers; an owner is perfectly justified in sending such animals to the block after he has given them a fair trial and can see no immediate signs of any improvement in their behavior.

Holsteins stand supreme ac eonomical producers and here is where the farmer and dairyman who owns a herd of the big-producing Black-and-Whites hlods an advantage today. As the result of some extensive and careful investigations carried out by the Wisconsin agricultural experiment station among the cows of the various breeds in the university dairy herd from 1898 to 1906, it was decided that the Holstein cow ranked first in production of butterfat and in net profit returned above the cost of feed eaten. The average annual production of butterfat and net profits returned above the cost of feed eaten. The average annual production of butterfat and net profits returned by the representatives of the various dairy breeds then kept in the university herds as follows:

	Avg. Annual Production Butterfat	Avg. Annual Net Profit
Holsteni	337.5	$46.89
Jersey	312.6	42.26
Guernsey ...	297.0	40.74
Red Polled..	295.5	37.68
Brown Swiss	278.0	38.50
Shorthorn ...	264.7	34.44

—Holstein Friesian Bulletin.

MILK CHEAPEST FOOD AVAILABLE

A Colorado bulletin says: "To get a clearer idea of how dairy products meet present day needs, the following comparisons are made on milk:

One quart of milk on an energy basis equals: 2 pounds chicken .79 pound steak; 8 eggs; 3.35 pounds oysters; 7 oranges; .76 pounds of fish; 6.55 pounds tomtaoes; ½ dozen bananas; .79 pound English walnuts; 3.5 pounds asparagus.

Figuring this on a price basis (Colorado prices March. 1918), one quart of milk at 12½ cents is worth as much as: 60 cents worth of chicken; 28 cents worth of sirloin stake; 20 cents worth of eggs; $1.33 worth of oysters; 22 cents worth of fish; 40 cents worth of oranges; $1 worth fo tomatoes; 17 cents worth of bananas; 21 cents worth of English walnuts; $1 worth of asparagus.

Good milk at 15 cents per quart is by far the cheapest animal food on Colorado markets today, and the more the consuming public use of it the cheaper will be their living expenses, and the better nourished will be the people.

THE COLOR OF CREAM

That the yellow color of cream and butter may be the result of bacteria present in the cow's milk as it leaves the udder, or which develop later, is the statement of R. F. Bourne, of the Colorado Agricultural College. There is. of course, the other source of good color. which comes from two common pigments of vegetable origin, called "carrotin" and "xantholophyll" which become assimilated more particularly by the Jerseys and the Guernseys. and are eliminated from the body in the milk, imparting the rich color.

These plant pigments are quite harmless, but of course have no nutrient value. However. no one relishes the idea of consuming milk or cream which owes its apparent richness to swarms of bacteria, even though they may bear a fairly good reputation. Moreover, some of them are decidedly deleterious to health. The use of well cleaned and sterilized utensils, with due regard to the hearth of animals, including the condition of the udder, are usually sufficient to avoid such abnormalities as yellow milk. "bloody" milk, ropy milk. and other similar conditions, says Prof. Bourne.

THE COW THAT IS PROFITABLE

Perisstent milkers, the kind that milk well for a whole year. not the type that yield abundantly at first and then soon drop down in production. are the winners in the long run. The steady cow is usually the most profitable one. Some cows yield considerably above the average at the first of their lactation periods, but within two or three months their yield falls nearly a third and by the end of the period may be only o fourth of the original production. Cows tend to decrease in milk flow as the dactation period advances. The percentage of fat gradually increases as lactation advances.

LISTER

The name that stands for Quality in Farm Machinery

LISTER ENGINES ARE BRITISH BUILT

Have the Largest sale in the British Empire.

2.3.5.7&9 H.P. On Skids or Truck. High Tension Magneto Ignition Automatic Lubrication.

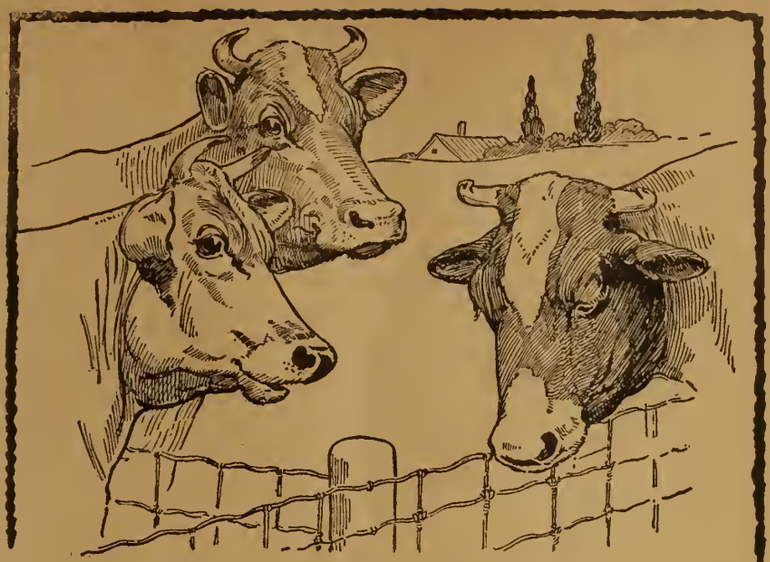
Lister Silos, Ensilage Cutters, Threshers. Sprayers. Milkers, Electric Light Plants, Melotte Cream Separators.

THE LISTER GRINDER

Write for price of our famous Grinder Outfit comprising 5 H.P. Lister Engine and a 9¾" Lister Grinder.

Write to Dept. F

R.A. LISTER & CO., LIMITED TORONTO, ONT.



IF COWS COULD TALK

"Good morning, Mrs. Fawncoat. I hear that all the cows in the county are joining the 'Win-the-War' Club."

"Yes, Mrs. Starface, the Dominion Government authorities say we must increase the production of butter-fat, and we cows have all promised to do our 'bit.' "

"There's one thing I want to say right now," spoke up Mrs. Black. "The farmers have got to back us up in this movement. I'm with the rest of you, heart and soul, but what chance have I got?"

"Why, Mrs. Black, what's the matter? You have a fine warm barn and plenty to eat and drink."

"Yes, I know; but what can I do as long as they use that old cream separator on the place? It never was any good, anyway, and now it wastes so much cream I'm just plain discouraged."

"Well, you're not so badly off as some cows, where they haven't any cream separator at all."

"I don't know about that. There's a lot of cream separators in this county that are only 'excuses'—not much better than none at all. I tell you, Mrs. Fawncoat, with butter at present prices and our Allies begging every one to save fat, it's almost a crime to waste butter-fat the way some or these farmers do."

"That's one thing I'm thankful for," said Mrs. Fawncoat, "there's no cream wasted on this farm. We have a De Laval Cream Separator and everybody knows that the De Laval is the closest skimming machine."

"Well," said Mrs. Starface, "we never used a De Laval on our place until last fall and supposed one separator was about as good as another; but, honest, the De Laval is the first cream separator we've ever had that gave us cows a square deal."

P. S.

Of course your cows can't talk—but if they could you'd never have a moment's peace until you got a De Laval Cream Separator. Remember that a De Laval may be bought for cash, or on such liberal terms as to save its own cost. See the local De Laval agent, or if you don't know him, write to the nearest De Laval office at below.

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Buttermakers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER

50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

Every Farm Should have an "Ayrshire"
The Cow For Profit
Rich milk—high in butter fat—docile and good feeders.
WRITE W F STEPHEN Secretary
CANADIAN AYRSHIRE BREEDERS' ASS'N
Box 504 HUNTINGDON, QUE.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B.

Ayrshire Oattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co,, N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Newburn Hill Stock Farm

Our present offering is one pure bred Shorthorn Bull, 11 months of age, also a few Heifers from one to three years of age. All of good milking qualities.
Beef, Hay and Potatoes in car lots.
Choice Cultivated Strawberries a specialty
FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
UPPER SACKVILLE, N. B.

Firshade Farm R.O.P. Shorthorns

Present offering, 2 Bull Calves, One Heifer, three years old.

P. R. L. FAIRWEATHER,
Rothesay - - - N. B.

Five Ayrshire Bulls for Sale!

From good milking strain. All fit for service.

Prescott Blanchard,
Truro, - - Nova Scotia

AYRSHIRES BULLS!

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

Willow Glen Shorthorns!

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

MARKETS.

ST. JOHN

Beef, per car, Country Beef, 12—16c.
Beef, per car, Western beef, 19—22c
Veal, 9c to 12c.
Hogs 23c to 26c.
Lamb, $8.00 to $12.00.
Mutton, 20c to 23c.
Beef Hides, 10c lb.
Sheep Skins, $2.00 to $3.00.
Calf Skins, 35c lb.
Potatoes, $2.00 to $2.50.
Carrots, $2.00 to $3.00.
Turnips, $1.50.
Parsnips, $2.00 to $3.00.
Chickens, 50c to 55c.
Fowl, 45c to 50c.
Turkeys, 40c to 55c.
Geese, None.
Butter, Creamery, 48c.
Butter, Dairy, 40c to 44c.
Cheese, 23c to 24c.

MONTREAL

Country Produce

The receipts of eggs today were very large but, notwithstanding this fact, the tone of the market ruled about steady and no further change in prices was announced. The demand for supplies in a wholesale jobbing way continues good, which indicates that the consumption is keeping up and this, coupled with the large quantities being put away in storage, keeps the market pretty well cleaned up of any surplus, and, on the whole, quite an active trade was done. The receipts today were 4,751 cases, as against 3,600 for the same day last week, and 3,484 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

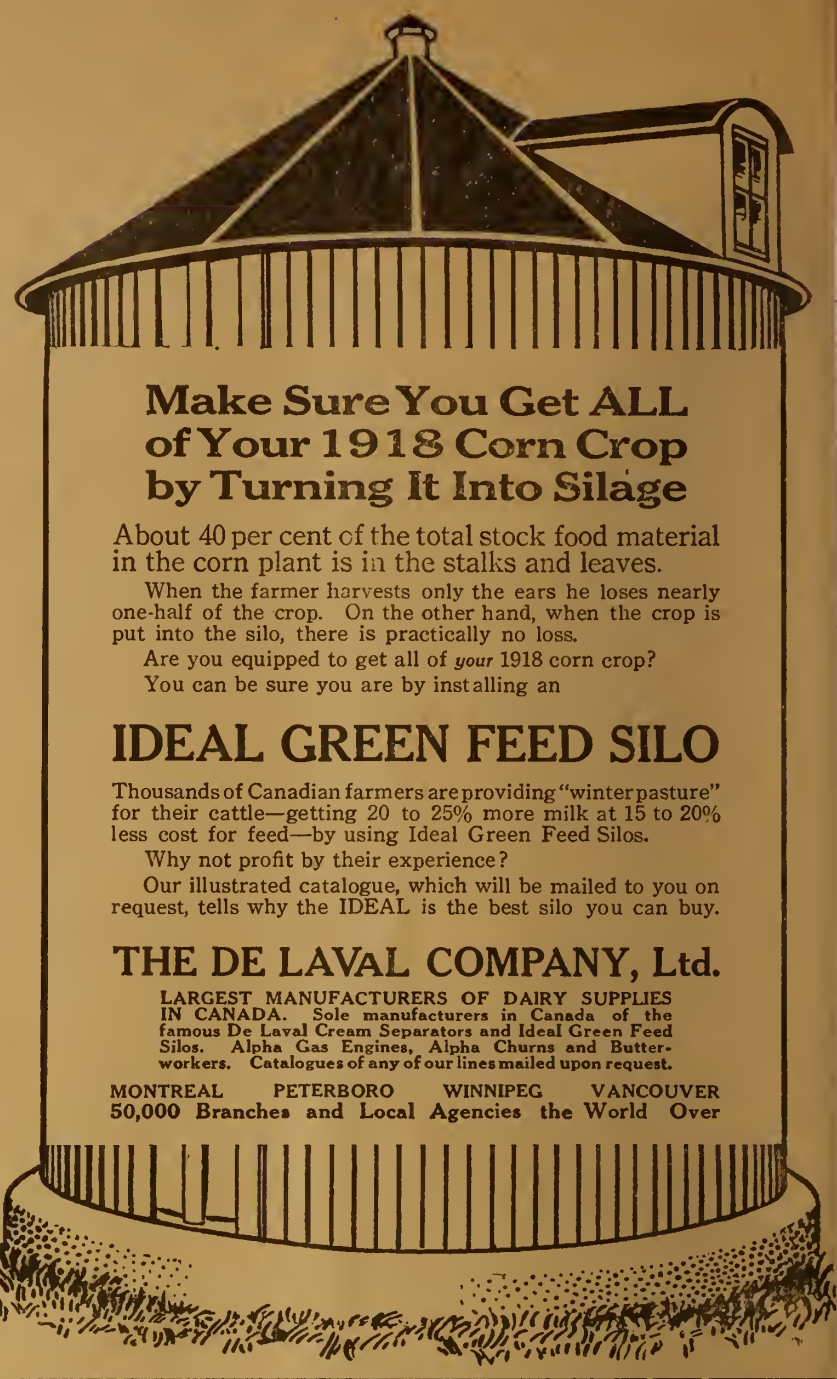
Selected stock.....43c to 44c
No. 1 stock.....40c to 41c
No. 2 stock.....37c to 38c

There were no further developments in the market for maple product today, prices for maple syrup being steady at the recent reduction noted. There continues to be a steady demand for supplies for local consumption and for shipment to outside points, and a fairly active trade was done, with sales of 15 to 20-gallon barrels at $1.75 per gallon, five-gallon tins at $1.80 per gallon; one-gallon tins at $1.90 to $2.; and 8½-lb. tins at $1.40 per tin. The tone of the market for maple sugar remains firm, with fairly active business passing in a wholesale jobbing way at 21c to22c per lb.

Owing to the more liberal supplies of potatoes coming forward, an easy feeling prevails in the market, and the prospects are for lower prices in the near future, but no actual change has been announced as yet. The demand is fair from some sections for car lots and sales of Green Mountains were made at $1.40 to $1.45 per bag of 90 lbs. in bulk; reds at $1.40 to $1.45, including bags; and McIntyres at $1.30 to $1.35 ex-track, while in a wholesale jobbing way Green Mountains sold at $1.70, reds at $1.60, and McIntyres at $1.50 per bag of 90 lbs. ex-store.

Dairy Produce Trade

The receipts of butter today were 1,074 packages, as against 367 for the same day last week, and 522 for the corresponding date a year ago. Owing to the continued liberal supplies coming forward, which are in excess of the daily requirement of the trade at present, and the quality of the stock, the tone of the market continues weak and prices today scored a further decline of 1c per lb. for both wholesale and jobbing lots. The demand was better today and a fair amount of business was done in a wholesale way, with sales of finest creamery at 44½c to 45c per lb., and in a jobbing way solid packages sold at 46c, and 1-lb. blocks at 47c per lb. At Gould's Cold Storage today the offerings amounted to 400 packages, which sold at 41c per lb., f.o.b., country points.


Make Sure You Get ALL of Your 1918 Corn Crop by Turning It Into Silage
About 40 per cent of the total stock food material in the corn plant is in the stalks and leaves.
When the farmer harvests only the ears he loses nearly one-half of the crop. On the other hand, when the crop is put into the silo, there is practically no loss.
Are you equipped to get all of your 1918 corn crop?
You can be sure you are by installing an
IDEAL GREEN FEED SILO
Thousands of Canadian farmers are providing "winter pasture" for their cattle—getting 20 to 25% more milk at 15 to 20% less cost for feed—by using Ideal Green Feed Silos.
Why not profit by their experience?
Our illustrated catalogue, which will be mailed to you on request, tells why the IDEAL is the best silo you can buy.
THE DE LAVAL COMPANY, Ltd.
LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA. Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butterworkers. Catalogues of any of our lines mailed upon request.
MONTREAL PETERBORO WINNIPEG VANCOUVER
50,000 Branches and Local Agencies the World Over

We quote prices as follows:

Finest creamery.....44½c to 45c
Fine creamery.....43½c to 44c
Finest dairy.....40c to 41c
Fine dairy.....38c to 39c

The receipts of cheese today were 2,157 boxes, as compared with 1,529 for the same day last week and 3,665 for the corresponding date a year ago. At Gould's Cold Storage today there were 800 boxes of cheese offered, which met with a good demand, and

all sold at 21¾c per lb., f.o.b., country points, as against 21½c to 21¾c last Friday. Apart from this, the market was rather quiet, with only a small trade passing, for domestic consumption in small cheese at 22½c to 23c per lb.

The Provision Market

There was no further change in the live hog situation today, but the tone of the market was firm at the recent advance in prices noted as receipts were very small, for which the demand from packers was good and sales of selected stock were made at $21.25 to $21.50 per 100 lbs. weighed off cars. The trade in dressed hogs was steady, but the demand at present is principally for small lots to meet immediate requirements and sales of abattoir fresh-killed stock in a wholesale jobbing way were made at $29.50 to $30 per 100 lbs.

The market for smoked and cured meats was without any new feature to note, prices for all lines being maintained, but the volume of business passing for local and country account is not large as the demand is only for small quantities. Sales of 8 to 10 lb. hams were made at 36c to 38c per lb., 12 to 15 lbs. at 34c to 35c, and heavier weights at 32c to 33c, while breakfast bacon sold at 40c to 42c, Windsor selected bacon at 43c and 44c, and Windsor boneless bacon at 45c. The condition of the market for barreled pork was unchanged, the trade being quiet and of a small jobbing character, with sales of Canadian clear fat back pork at $62, Canadian clear plate pork at $61, and Canadian short cut back pork at $59 per barrel.

There continues to be a steady demand for lard in a wholesale jobbing way and as supplies are none too large, the tone of the market is firm, with sales of pure leaf grades in a wholesale jobbing way at 31c to 31½c per lb. in 20-lb. wood pails and at 32½c to 33c per lb. in 1-lb. blocks, while compound lard is selling at 28c to 28½c in 20-lb. wood pails.

The receipts of provisions today were 225 barrels pork, 1,622 packages lard, 8 boxes hams and bacon, and 1,912 packages tinned meats.

The Local Flour Market

There was no important change in the flour market today. A steady trade continues to be done in rye flour and sales of broken lots were made at $17 per barrel in bags, delivered to the trade, while rice flour is selling at $9 per bag of 100 lbs., put up in 220-lb. sacks. The domestic trade in spring wheat flour is not large, as the demand is principally for small lots to meet immediate wants. Car lots of Government standard grade for shipment to country points were quoted at $10.95 per barrel, in bags, f.o.b. cars, Montreal, and to city bakers at $11.05, delivered. The tone of the market for winter wheat flour remains firm, owing to the small offerings from Ontario millers, and the fact that stocks on spot are not large, for which there is a steady demand, and sales of broken lots were made at $11.40 to $11.50 per barrel in bags, ex-store.

Millfeed and Rolled Oats

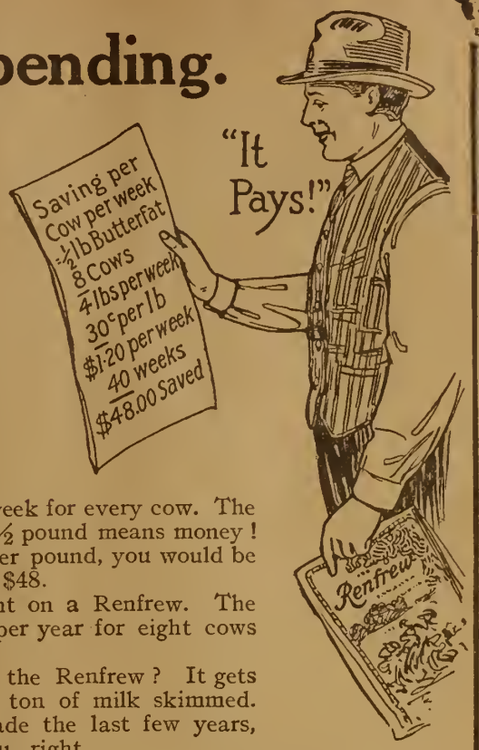
The market for millfeed was without any new feature to note. The demand for pure grain moullie continues ample to absorb all offerings and prices rule firm, with sales at $75 per ton, including bags. The trade in bran and shorts is quiet on account of the continued scarcity of supplies, and prices are unchanged at $35.40 for the former, and at $40.40 for the latter, per ton, including bags. There was no further change in the market for rolled oats, prices being about steady at the recent decline noted, with a small trade passing for domestic account in standard grades at $5.35 per bag of 90 lbs. in jute. The tone of the market for cornmeal is firm, with steady demand for small lots, and sales of Golden grade were made at $6.25 to $6.40, and bolted grade at $4.50 to $4.75 per bag, delivered to the trade.

The Baled Hay Market

The trade in baled hay was quieter today owing to the falling off in the demand for local account, and the fact that the Government are only taking from dealers the quantity called for as per contracts, consequently, as supplies are coming forward liberally they are somewhat in excess of requirements and the tone of the market on spot is soft, but there is no actual change in prices to note. Car lots of No. 2 hay are still selling at $17, and No. 3 hay at $15.50, but clover mixed hay is moving slow at $8 to $10 per ton ex-track.

Saving Money by Spending.

"SAVING" money by continuing to use an inferior machine is like "saving at the spigot and wasting at the bung." For instance, if your machine skims down to .1 per cent. for every thousand pounds of milk skimmed, compare that result with the splendid, proven record of the Renfrew. You find by having the

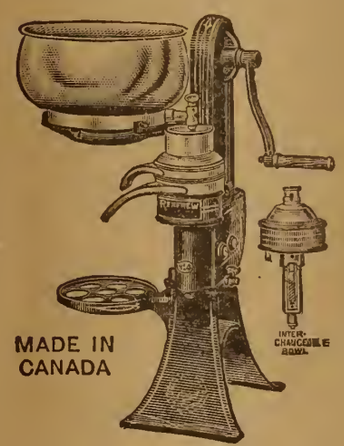


Renfrew

that you will save about ½ pound of butter-fat per week for every cow. The Renfrew skims down to .01 per cent. That loss of ½ pound means money! With eight cows, and butter-fat at say 30 cents per pound, you would be losing every year (40 weeks' milking) the tidy sum of $48.

This sum saved is accepted by us as a first payment on a Renfrew. The saving soon pays for the machine—and then the $48 per year for eight cows becomes extra profit.

Will it not pay you to discard the old machine for the Renfrew? It gets all but the last three ounces of butter-fat in a whole ton of milk skimmed. If you could reckon the losses the old machine made the last few years, wouldn't it decide you right away to get the close-skimming Renfrew?



Our illustrated booklet gives interesting proofs of the Renfrew's close skimming, including tests by Government Dairy Schools. It also explains the Renfrew's self-oiling system, the interchangeable capacity feature, easy-to-clean advantages, etc. Send for booklet to-day.

Other Lines: **Renfrew Kerosene Engine, Happy Farmer Tractors, Farmers' 2000 lb. Truck Scale.**

NOTICE.—The Renfrew Separator illustrated here was formerly sold under the name "Standard," which identified it as a high efficiency cream separator. The name "Renfrew" has been used on the same machine for several years for our United States and foreign trade and under that name has become as popular in those markets as under the name "Standard" in Canada. Now the name "Renfrew" has been adopted for Canada so as to link the name more closely with that of our company and so that we can sell the machine under a uniform name throughout the world.

The Renfrew Machinery Co., Limited

Head Office and Works: Renfrew, Ontario

Eastern Branch: Sussex, N.B. U.S.A. Branch: Milwaukee, Wis.

Agencies almost everywhere in Canada 12

MILK SHOULD BE PROMPTLY REMOVED FROM THE BARN

Warm milk at the time it is drawn from the cow readily absorbs from the air of the stable certain substances which impart to the milk disagreeable odors and tastes. When milk is allowed to stand in a poorly ventilated or unclean barn, the characteristic odor and taste of aromatic feeds such as beets, ensilage and turnips may be imparted to milk in the same manner. This may lead one to believe that the trouble is due to food which has been eaten, and that the odor and taste have been eliminated with the milk through the udder.

Ordinarily the condition can be corrected by the prompt removal of the milk as soon as drawn from each respective animal and placing it in the milk house where facilities for the proper and immediate cooling are available.

I was cured of Acute Bronchitis by MINARD'S LINIMENT.
Bay of Islands. J. M. CAMPBELL
I was cured of Facial Neuralgia by MINARD'S LINIMENT.
Springhill, N. S. WM. DANIELS
I was cured of Chronic Rheumatism by MINARD'S LINIMENT.
Albert Co., N. B. GEO TINGLEY

SAVE YOUR CREAM

Raise Your Calves **At a Big Profit**

International GROFAST Calf Meal will raise three or four calves at the cost of raising one calf on new milk. Sell your Cream and still raise your calves, at a handsome profit. GROFAST is a complete and cheap scientific substitute for Milk. Endorsed by farmers everywhere. Your dealer sells it. Write us for Booklet, "How you can Raise and Grow Calves at a Low Cost Without Milk."

INTERNATIONAL STOCK FOOD CO., LIMITED
Ask Your Dealer TORONTO

INTERNATIONAL GROFAST CALF MEAL

GOMBAULT'S
CAUSTIC BALSAM

A safe, speedy and positive cure for

Curb, Splint, Sweeny, Capped Hock, Strained Tendons, Founder, Wind Puffs, and all lameness from Spavin, Ringbone and other bony tumors. Cures all skin diseases or Parasites, Thrush, Diphtheria. Removes all Bunches from Horses or Cattle.

As a **HUMAN REMEDY** for **Rheumatism, Sprains, Sore Throat,** etc., it is invaluable.

Every bottle of **Caustic Balsam** sold is Warranted to give satisfaction. Price **$1.50** per bottle. Sold by druggists, or sent by express, charges paid, with full directions for its use. Send for descriptive circulars, testimonials, etc. Address

THE LAWRENCE-WILLIAMS COMPANY, Toronto, Ont.

THE HORSE

THE HORSE'S COAT

The general appearance and comfort of a horse is greatly influenced by his coat. A well-groomed horse, like a well-groomed man or woman, is "pleasant to look upon." The coat of a horse to a great extent, gives evidence of care or neglect, as the case may be. While a nice, fine, silky, glossy coat adds much to the horse's general appearance, it requires a great deal of attention to keep it thus, especially during the late fall and winter months. Some horses have, naturally, much finer and shorter coats than others, and, while breeding has some influence in this respect, we frequently notice a vast difference in animals of the same breeding. Why this is we cannot determine, and are simply compelled to accept it as a fact. The age of the animal has an influence; we notice that it is not usually possible to keep the coat of a quite young or very old horse in as fine a condition as that of an animal between adulthood and old age. Horses under five or over twenty do not usually give the same returns for care and attention, as regards coat, as do those between these ages. In the former cases it may be that the more or less general fevered state of the system, consequent upon dentition, has an influence upon the coat, and in the latter case we probably are justified in assuming that the general vitality of the animal is more or less impaired, and the coat, as well as other parts of the body, evidence this decrease in vitality. We frequently hear people say that they "do not like grey or white horses, as they are so hard to keep clean." A grey horse is no harder to "keep clean" than a dark colored one, but dirt or stains show more readily, and it requires more attention to keep him "looking clean." We often notice, when a team consists of a grey and a dark-colored horse, and when care is taken to keep them looking well, that on close examination the grey has a finer, shorter and cleaner coat than his mate from the fact that stains, etc., show so plainly on him that he receives more grooming. During the summer months there is little trouble experienced in keeping a horse's coat looking nice, but as the weather becomes cold in the fall nature demands that the horse be clothed accordingly, and there is a strong tendency to growth of hair, and we may say that "the coat loses its gloss in proportion to the length of hair." In order, then, that we may retain the required gloss, we must take what measures we can to prevent this growth. In order to do this we must, in addition to regular grooming, avoid unnecessary exposure, and when exposure is necessary provide artificial protection when the animal is not in motion. As regards grooming, a horse should be thoroughly groomed twice daily; not merely the external surface of the coat brushed and rubbed, but the hair thoroughly agitated to the roots by working the comb or brush both with and against the grain of the hair, in order to remove dust, dandruff, etc., and thereby prevent any occlusion of the openings of the sweat glands and keep the coat free from dust. Whenever a horse has been ridden or driven or worked hard enough to cause perspiration, it would be well to rub him until dry. This is the manner in which race horses are treated, and a well-cared-for race horse certainly presents a fine coat. This practice, however, is not practicable in the average stable. It would require more help than the average horse owner could afford, or is willing to keep. The next best thing to do is to clothe him warmly, place him in a comfortable stall, excluded from drafts, and, when his blanket has become moist with perspiration, remove it and supply a dry one. When he has become thoroughly dry, a good grooming will remove the dried perspiration, free the matted hair, and remove all dirt and dust. Of course, horses must not be left out in the fields or paddocks at night, when the weather is liable to become cold, if we wish to preserve short coats. The advisability of wearing clothing in the stable is open to discussion, but if the stable be not quite comfortable we think that blankets should be worn, and even in warm stables light clothing should be worn as it tends to prevent dust entering the coat. In all cases in cold weather, when the animal is not in action, whether standing in the stable or standing outside in harness his body should be clothed sufficiently to protect him from cold and wind, and when it is necessary to work or drive a horse in a rain or snow storm, it is well to have him covered with a waterproof covering, in order to keep the skin dry and warm. Cold and dampness stimulate the growth of hair, in order to protect the skin, hence, when we are particular about the coat we must endeavor to avoid this stimulation. When horses are being used for slow work, not demanding sufficient exercise to cause perspiration, in very cold but dry weather, it is wise to wear blankets under the harness to protect the skin. In most cases, where reasonable care is exercised on the lines above mentioned, we will succeed in maintaining short, sleek coats on our horses, but there are exceptions. As stated "age has an influence," and there are certain individuals that from some unaccountabel reason or predisposition, will grow long coats, notwithstanding the most careful attention. In such cases the only method of preventing long coats is to clip. WHIP.

HORSES TROUBLED WITH WORMS DO NOT THRIVE

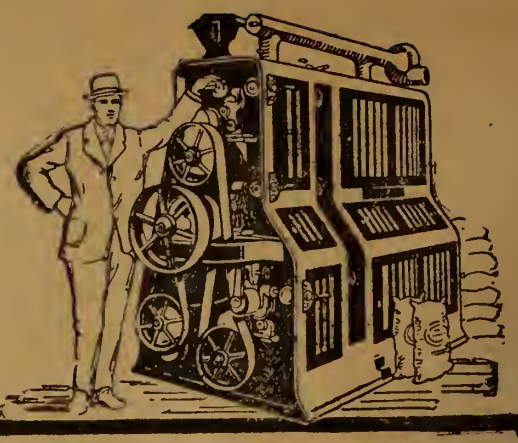
Many horses lose condition, or fail to make gains during winter months because they are infected with worms. This is especially true of colts. Horses suffering from worms generally have a good appetite, but apparently benefit little from the food eaten.

There may be no symptoms which point conclusively to worms, but this trouble is so common that if the colts and horses are not doing as well as they should for the feed given, a worm remedy may prove of decided value. In treating horses for worms, it is well to keep in mind that the drug is meant for the worm rather than the horse, and should, therefore, be given in as concentrated form as possible. To ensure this, little or no bulky food should be fed during the course of treatment, and as the parasites are stupefied by worm remedies rather than killed, the animal's bowels should be kept in an active condition so that the stupefied worms may be passed out before they regain their vitality. A well-salted bran mash once a day will generally ensure such an action.

The following formula is a worm remedy which is also of value as a tonic: Powdered nux vomica two ounces, powdered gentian root four ounces, powdered areca nut six ounces, sodium chloride four ounces, arsenious acid two drams; mix.

Give one heaping teaspoonful to every 250 pounds weight, every morning and evening for about 10 days. The medicine may be mixed with ground feed or sprinkled over oats which have been dampened.

June is a good months to start the work horses staying out on grass at night, but do not forget that horses at hard work require oats as well as grass.



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THE IMPORTANCE OF ACTION IN HORSE BREEDING

An old friend of mine once, when he was told that a certain horse he was looking over was deficient in bone, replied tersely, "Action is power." The statement is so self-evident that one would think it needs no insistence. yet I am afraid that it is every day overlookel in favor of some point which, however important it may be, is of less mportiance to the practical utility of the horse. If we come to examine the uqestion carefully we shall find that the vale of the horse depends entirely upon his being capable of doing the work for which he is intended with the least expenditure of waste and with greatest amount of comfort and ease to the man who is working with him. In other words, the horse's value depends upon his capability to work on the lines of least resistance, and to form a fair estimate of that it is necessary carefully to examine a horse's action. This is not always done. even in the show ring, and I have seen men, both when purchasing and when judging, who seemed to make a point of never standing in front of or behind a horse. It should not seem necessary to insist on the necessity of getting in direct line with the horse whose action you are examining, but apparently it is.

When I was starting life an experienced "old hand" told me that I was to leave a horse which did not make a good impression when he first came out, and never look at him again. He said I would be sure to buy him if I did, and that he would never give me any satisfaction whilst I had him, and that when I came to sell him I should probably be so glad to see his back that I would sell him badly. The advice is thoroughly sound, as I found by by experience, though I would remind my readers that it is quite possible to be so fastidious when purchasing as to fall into the same difficulty. A man may get so tired of looking for the horse he wants that he buys a worse one than those he has previously rejected. I have known this to happeu more than once. But I think it is quite safe to urge on the would-be purchaser that he will be wise in shutting his eyes to all the perfections of a horse whose action, as a whole, makes a bad impression when he first is sent out. There may be exceptions —for instance, a horse may be upset when he first comes out either by the incompetence or bullying of the man who shows him, or by some outside circumstance. But even then, if carefully looked for, balance and actions will be found provided they the there.

One frequently hears such remarks as "His shoulders are all wrong but his action is perfect," or "He is perfect in shape but his action is deficient." Such remarks as these are contradictory. If a horse is perfectly shaped, if his joits are all in their proper place and in their proper working order, he must move well; he cannot do otherwise. And, per contra, if a horse is not truly shaped, he cannot move well and truly. It is an impossibility. He may move in a more or less showy manner, which in a certain sense pleases the eye, but his action cannot by any means be on the lines of least resistance. An important point is that the angle of the pasterns should be correct. However little it may be out of the correct line as the horse stands, it will be far enouogh out of it when he is extended, and a horse whose feet are thrown about, as we so frequently see when going at a good pace, is working at a disadvantagge, and when he is beginning to grow tired he is very apt to fall. If he is correct in this point he will stand up when many an apparently better horse will be in hopeless difficulties. I remember an instance in which this was strongly impresser upon me. I was riding a horse that was decidedly short of breeding. He was good looking enough, and his action was well balanced, but he lacked pace, yet the angle of his pasterns was perfect. It was my lot to ride this horse in two of the fastest runs I ever saw. One was forty minptes, the other forty-five. In the former I was one of some dozen, and I owed my position entirey to the correct pasterns and shoulders of my horse and his well-balanced action. There was in my way a stiff post and rail with a wide drain on the landing side. I rode slowly at the obstacle, a fairly big one under any circumstances, and sufficiently formidable on a beaten horse. My horse cleared it handsomely; it saved me more than half a field and got me an to good ground. But I am convinced that a heavy fall would have been the result had he thrown his feea about as some that I see in the show ring.

Many years ago the late Earl of Zetland—owner of Vottigeivo, Fandango, etc., impressed upon me the value of shoulder action. He pointed out that unless a horse put his foot well out, which he canot do unless his soulder is properly placed, the risk of his falling is great. He also said that we were likely to make the fatal mistake of taking high action for goood action. This we have done with a vengeance, and no one can examine carefully the action of the modern Hackney without recogni ing that much of the force expended is wasted in the air, and that high stepping iand well balanced acton are not convertible terms. Years ago the fatal mistake was made of ignoring the horse for the sake of the action. If a horse "pulled up," that is, if he hit his curb chain with his knee iit mattered nothing that he threw his feet all over the place, or whether he pu this feet more than half a dozen inches in front of hisnose. The result has been that Hackneys have, to a considerable extent, lost the good shoulders for which they were at one time famous, and that their action has also lost to a certain extent that balance which is the foundation of all good action.

The foundation of all action is the walk. It is a natural pace with all breeds of horses, and if a horse walks well, reaching out in front and getting his hind legs under him, and walking on at a good pace, he is pretty certain to move well in his other paces. Somehow the walk seems to have been much neglected of late years. If a horse is brought out for inspection everything is done to excite and upset him so that he shall not walk, and a similar state of things prevails in the show ring. In how amny cases when the judges say to an exhibitor, "Walk him donw and trot him back," is the him down and trot him back," is the It of course by no means follows that because a horse shuffles in his walk that he will trot badly or gallop badly. I have known and owned horses that trotted and galloped well and that were bad walkers, having neither style nor pace, but I hold that the walk is a valuable pace in a horse, and that if he is at all built on right lines he ought to walk well. The question therefore rises, has the horse's education in this direction been neglected for many generations until the bad habit bceome hereditary? It is possible. And I would point out that by "neglected education" I mean the teaching of those bad habits which are the result of indifferent horsemanship. Dalesman, in Farmer and Stockbreeder.

SELDOM SEE

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POULTRY.

WHAT MAKES THE EGG

Experiments have shown that from 98 lbs. of food a hen can produce 30 lbs. of egg. The food must be given in the proper proportions in order to gain this efficiency. When too much of one requirement is fed, it goes to waste. When too little of one requirement is fed, the surplus of every other requirement is wasted. Common sense feeding may well be considered by the man who hopes to be a successful poultry farmer, in this day of high prices for feeds.

Then hen is the factory. We supply the materials and she does the manufacturing. In order to turn out the finished produce she needs a certain quantity of several things. She must have water, protein, fat and ash, and yet she is not particular as to how these substances are furnished, as long as she receives them. She will take the protein as corn or wheat, without refusing to furnish eggs, but with certain combinations she is more efficient than with others.

For example, if the 98 lb. of food is given her in the form of 30 lb. wheat, 10½ lb. middlings, 10 lb. bran, 5 lb. ground corn, 5 lb. meat scrap, 15 lb. green food, 3 lb. shell, 3 or 4 lb. grit, 3 lb. charcoal, 5 lb. oilmeal and the other four pounds of skim-milk, she will gain about the highest efficiency from the ration. If you would double the amount of wheat and leave all the other things the same, the extra wheat would be wasted. If, on the other hand, you would keep the protein-matter food less than required, you would be feeding a certain quantity of each of the other required items in the composition of the egg that would be wasted.

An egg is an egg, as far as composition is concerned. The hen will not give you an egg that contains no fat, simply because you offered her no fat, but double the amount of protein. She will simply take time off and wait until you give her the fat before she completes the finished product.

There are, of course, limits to the powers of feeding. No care in ration selection, no balancing according to the needs of the egg will cause every hen to lay. Some hens are born to lay, others are not, and will never be good layers. A laying hen is born, not made, but when you have laying hens, be sure they have opportunity to work efficiently.

Considered as a matter of feed economy, we should select the balanced ration, which means to give the proper amounts of the proper foods. In addition to the food that goes to make the eggs, a certain per cent. goes to the production of flesh, depending on the breed and individual. Then again, no amount of food will make a hen lay if housing conditions are bad, but we will disregard this by considering the proper food when conditions are right.

What would happen if we fed the hen on wheat alone? She would eat four ounces a day, for example. About one-tenth of an ounce o fwheat is protein. Of this amount about three-fourths would go to the upkeep of the body, although this varies with the breed. An egg contains one-quarter ounce of protein. The hen can only collect enough protein for one egg within several days. But the hen must have another quarter ounce of lime to make the shell of each egg. She must have a certain amount of fat.

She would get enough protein to make an egg about twice a day, provided all the protein was digested, enough lime to make an egg every two weeks, and enough carbohydrates to make three or four eggs every day, and make an egg that was half fat. If the hen would be the best she could the wheat ration would be all right, but she will not. She camps on the job until the lime arrives, and then she makes the egg. The waste of food goes on until you give her that lime.

MELVIN RYDER.

COST OF EGG-PRODUCING FEEDS

Feed to produce one dozen eggs cost 10c with pullets, 14c with two-year-old hens, and 19c with three-year-old hens in a three-year feeding test recently reported by poultrymen of the United States Department of Agriculture. These were the cost figures of feed at the time of the experiment, which began in 1912, and must be corrected to present prices. Tables of rations and costs presented in the report enable poultrymen to make these corrections when compared to 1917 prices. In Bulletin 561 of the Department of Agriculture, "Feed Cost of Egg Production", the specialists describe in detail this test, which was undertaken to compare the cost of various rations fed under general farm conditions. Much information relating to feeding under the various conditions also was learned in the experiment.

Starting with six pens of 30 pullets each, the test was enlarged to include 16 pens containing 366 fowls. Most of the pens were made up of 30 standard-bred pullets, bred and reared under the same conditions and selected for vigor, standard shape and color. Some flocks consisted of fowls of one breed, while others contained more than one kind of pure-bred fowls of the general-purpose type. Pens of cross-bred pullets also were used.

With the exception of three flocks which were confined to good-sized yards, all the fowls were allowed free range over several acres of rough land. Detailed records were kept of the feed used, the weight of the eggs. and careful observations were made of the conditions which affect egg production, such as molting and broodiness. The test was conducted on the experiment farm of the Bureau of Animal Industry, at Beltsville, Md. Summarizing the results of the tests, the specialists draw these conclusions:

The average egg yield for the first laying year in all pens was 131 eggs, and the highest pen average yield was 169.5 eggs. In the second year the average egg yield of all pens was 92.7 eggs, which decreased to 78.2 eggs in the third laying year.

The average value of eggs over feed cost the first laying year was $2.56 per hen, falling to $1.41 the second year, and to 79c the third year. The highest average value in any pen was $3.41.

The general-purpose fowls consumed annually 72 pounds of feed, which cost $1.13 while the Leghorns ate 55 pounds which cost 87c.

Good results were obtained with rations both with and without oats. The use of this grain added variety to the ration without increasing the cost.

Fowls not fed any beef scrap or other animal protein lai donly 90 eggs during their pullet year, compared with 137 eggs from the beef-scrap pens, and 84 compared with 83 in their second year. The eggs of the no beef scrap pens cost about 2.2c per dozen more to produce the first laying year, but these costs were about equal during the second year. The fowls not fed beef scrap laid very poorly in winter, thus materially reducing the value of their eggs.

Cottonseed meal used in place of beef scrap as a high-protein feed in the ration, produced brown or greenish spots on the yolks of the eggs, especially in warm weather, making a considerable proportion of them unfit for market. Eggs were produced more cheaply and at a considerably greater

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profit on the beef-scrap ration.

Fish meal at $7 a ton less than beef scrap proved to be a good high-protein feed, which can be used to advantage to replace beef scrap. The fish meal did not in any way affect the flavor or quality of the eggs.

General-purpose fowls allowed to select their own mash constituents ate a dry mash containing about 63% corn meal, 19% beef scrap, 9% bran, and 9% middlings. Leghorns ate a mash of about 66% corn meal, 26% beef scrap, and 4% each of bran and middlings. No better results were obtained by this method of feeding than where the ground grains were mixed together in a mash.

Good mashes, as indicated by these experiments, may be made of 66% corn meal, 26% beef scrap, and 4% each of bran and middlings, or 2 pounds of corn meal and 1 pound each of bran, middlings and beef scrap, with a scratch feed in each ration of equal parts by weight of cracked corn, wheat and oats, which is fed so that the hens receive about equal parts of scratch feed and of mash.

The Leghorns on free range gave a considerably greater egg yield than those confined to a fair-sized yard. This difference was less marked in the general-purpose hens.

Sprouted oats fed as green feed to hens confined to yards cost about 10c per hen a year and $1 per dozen eggs, not including any charges for labor and equipment. The hens ate on an average in one year about 1.3 pounds of oyster shell and 0.7 of a pound of grit, which together cost about 1c per hen.

The Leghorns did not lay as well in the winter as the general-purpose breeds, especially during their second year, but the Leghorns produced eggs about 3c per dozen cheaper during their first year, 6.4c cheaper in their second year, and 9.8c cheaper in their third year, than the general-purpose breeds. One pen of Leghorn pullets produced eggs in their first year at a feed cost of 6.7c per dozen, while the value of the eggs per hen for the year was $3.41 over cost of feed.

The average weight of a dozen eggs from the general-purpose fowls during their pullet year was 1.53 pounds, 1.60 during their second year, and 1.63 during their third laying year. The eggs from the Leghorns averaged 1.45 pounds during their pullet year, and 1.49 during their second and third years.

The egg production of the general-purpose fowls decreased 32% in their second laying year. The decrease was considerably less in the Leghorns, their two-year average egg production exceeding that of the general-purpose breeds by 19 eggs. The decrease in production from the second to the third year was only 4% with the Leghorns, compared with 13% in the general-purpose breeds.

The cheapest eggs are produced in the spring, during April, May and June, while the greatest costs occur in October, November and December. The lowest monthly feed cost of a dozen eggs in any of these experiments was 4c, while in some cases no egs at all were produced during the month.

MAKE THE HEN WORK WHILE SHE IS YOUNG

The pullet year is the most profitable part of the fowl's life. Only the exceptional hens can be kept throuhg a second winter at a profit unless they have additional value as breeders. Hens on the farm now over two years old should be consumed at home or sold. If the farmer doubts his ability to distinguish a hen's age, he can put one hog ring on the right leg of each bird as she ends her pullet year. This is inexpensive, and easy of identification.

If feed is scarce as well as expensive, then it will pay to sell all the young roosters that won't make money, and all the stunted, undersized and slow-growing pullets. Anything that will not lay or grow profitably should be sold, leaving their feed for poultry that is more profitable.

The females that have just finished their first year should be sold as soon as they quit laying, unless for some reason or other a few must be kept as next year's breeders. If October 1 be the date for culling, 95 per cent. of the birds that had been poor layers would be pretty well moulted and show the yellow color in beak and shanks. The good layer would either not have started moulting or would be ragged, but in good, vigorous condition, with all her beak, shank and skin color "laid out" and absent. The early moulter, was the poor layer, and will seldom get back into laying before the late moulter, and then not until near-Christmas time. The late moulter was the heavy layer, and is the kind to use for breeding. H.

TO ERADICATE POULTRY PARASITES

The first step to eradicate the pests which live in cracks and crevices in poultry houses is to thoroughly clean the house. All litter, nest material and droppings should be removed. Then spray or paint thoroughly the entire surface of the house and literal ly flood all cracks and inside of nests with a 5 per cent. solution of cresol. Use plenty of spray and do the work thoroughly.

Finally it should be remembered that one application of either of these treatments is not sufficient. Where there are lice and mites there are also eggs or "nitts" of these same pests. A second treatment should be given about one week after the first. By this time the "nits" will be hatched and the treatment will affect them while it did not kill the "nits" at the first application.

These suggestions followed out will relieve the hen of the greater numer of parasites and will enable her to make the best possible use of her feed and time. It is not profitable to feed a hen when lice or mites are sapping all the nourishment and vitality from her body.—P. F. Schowengerdt, Colorado Agricultural College, Fort Collins, Colorado.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

BILLY'S ORGY

By Grace S. Richmond

(Continued from last issue)

"I say—but you cut a dash in those togs old man. Never saw a white waistcoat and a bath-robe together before. Awfully novel and stunning effect."

"Mr. Broughton, don't let them make fun of you. I think it's just lovely of you to be taking care of your little nephew like this."

Julius bowed appreciatively to the Chicago cousin of the Meredith girls.

"You're all right, Julius," said Sally Meredith.

"Oh, but somebody ought to take a flashlight of him, with Billy on his arm like that." This from the half-back of the class eleven.

"Look at the kid's face! Better put on his bib next time, nurse." It was the captain of the class crew.

"Give Billy to me," whispered Sally Meredith in Julius' ear—"then you can run up and put on—something else."

Julius thankfully gave Billy into Sally's arms and made for the stairway, saying something or other about coming back in a mainute, but three stalwart members of Yale crews and football teams fell upon him and prevented this.

"No, you don't," they shouted. "It's a lot more of a treat to have our host dressed like this than according to his own ideas of what's what. Come back—you couldn't wear a more becoming thing than that blue and gray trailer."

Julius sat down resignedly on the bottom stair. "Have it as you like," he said calmly. "You can guy all you see fit, but it's up to you to get that kid back to sleep before his fond parents return. They're likely to come in any minute now."

"I'll go up and get him to sleep," said Sally Meredith. Julius gave her a grateful glance. Sally was looking excessively pretty tonight. The walk in the storm and the additional exercise Billy was giving her had brought a rich color into her face, above which a white Tam o'Shanter set upon masses of black hair brought out a general vividness of colring most attractive.

But the grateful look on Julius' face gave way to a harassed expression as his friends protested.

"Not much; she don't go up and put the kid to bed. He's good fun—aren't you, Billy Elliot? Look at his curls bob! He's having a rattling good time."

"Oh, let her take him up," proposed the stroke of the 'Varsity crew. "We'll go too, and see that she's properly coached—she's a green hand."

While various propositions relating to the baby's entertainment were being made Sally Meredith attempted to steal away upstairs, but she was discovered and the crowd followed. Julius was allowed to bring up the rear. They were held at bay at the door of the nursery by Sally.

"You may just stay out there," she commanded. "And you must be perfectly quiet. Just imagine what Mrs. Jack will say if she comes in and finds us like this."

"She won't come in," promised the half-back. "If their train gets through at all it'll be hours late. Everything's tied up in this storm. Wayne Griffin was coming out on the nine-fifteen and he didn't come—couldn't get here."

Sally turned down the nursery lights, found a rocking chair, and sat down in it with Billy in her arms. She began to sing softly. But Billy was uncompromisingly wide awake. He persisted in sitting absolutely erect in Miss Meredith's lap, his head cocked toward the door, outside which sat a circle of people on the floor, precisely as Julius had suggested arranging Mrs. Jack's servants and their attendants earlier in the evening. A hum of talk and much imperfectly suppressed laughter kept Billy agog with excitement.

"Julius, you will have to come and try," Sally called at length. The guests demurred, but Julius evaded them and went around and entered the nursery by another door.

"You are an angel," he murmured in Sally's ear, as he bent over the two, in his bathrobe.

"I know it," she answered. "It's because I'm so delighted with you for staying by the baby."

"Oh, yes, I stayed by him," Julius agreed modestly. "Anybody would. He's not so easy to get away from. And neither are you."

"Now, I wonder what you mean by that," whispered Sally Meredith, looking up at him with laughter in her eyes. Julius' hair was in a fine disorder, his collarless neck showed his strength of build, and his eyes were brilliant. It was entirely reprehensible, the thing he did at this point, but in ihs present attire he could hardly be called entirely responsible. As he bent over his nephew, patting his curly head and, in the dim light, presenting the appearance from the doorway of being engaged wholly in assisting Miss Meredith to soothe the wakeful baby, he suddenly laid a pair of warm lips on hers, whispering: "Forgive me—but you're irresistible tonight."

"Let's sing him a lullaby." suggested the Meredith's cousin from Chicago. She softly started a song, and everybody joined in. Billy, sitting in Sally's lap, his uncle, kneeling ly his side, patting his head; Sally, with her black hair drooping until it mingled with Billy's yellow curls, listened to a charming melody set to the usual idiotic words of popular songs, intermingled with occasional sibilations of stifled merriment:

" 'Come, Sus, lub me, do,
Same as I lub you.
Come, Mis', one kiss;
Don' yer see I lub yer true?
Sweet prize, ope' dem eyes,
'Fore I says adoo;
Gib me one smile,
Ma honey chile,
Ma Susquehanna Sue.' "

They sang this over and over, more and more slowly, more and more softly, impressed with their own prowess in lulling a child to sleep for the first time in their lives. Inside the nursery Billy, with sparkling eyes, watched his uncle's hand make a complicated circuit indefinitely repeated. tI passed over his head, down by his ear, fell inta his lap, where a smaller hand held Billy's, moved slowly and caressingly across this hand, sometimes stopping a moment, then going on up to the top of the baby's head, across his curls, off down over his ear—and so around. It was most absorbing.

The rattle of a latchkey sounded in the door below. Nobody heard it. In the lower hall Mr. and Mrs. Jack Elliot paused for one breathless instant, then one flew, and the other leaped up the stairs.

"Gib me one smile,
Ma honey—"

"Great heavens!" burst from Jack, standing aghast before the group on the floor, outside the nursery door. Mrs. Jack stopped for no preliminary questionings; she made one frantic rush into the nursery, breathing the anxious word: "Billy!"

Her brother Julius glanced at her with a dazed expression. Sally Meredith smiled reassuringly. Billy looked up from his uncle's hand, which was at that moment just moving lingeringly up towards his curls again, and leaped on Sally's lap and crowed.

"Well, we must be going, thank you," said the stroke-oar tactfully. "Oh, don't mention it, Mrs. Elliot. Always a pleasure to stand by a classmate in distress. Yale men are famous for that, you know. The old boy was behaving gallantly, but he was getting worsted in the fight, and we just saw the situation and rallied around him. A few moments more and I'm sure we should have had your son asleep. Good night—you were mighty lucky to get back in this storm. Good night, Mr. Elliot."

When Julius slipped softly into the house a half hour later, after taking Miss Meredith home, he found himself instantly confronted by his sister, who, at the moment, was coming down the stairs. Jack was lounging in front of the hall fireplace, thawing out.

"Ugh—fierce night," observed Julius, getting out of his overcoat and observing his sister's expression out of the corner of his eye. "You sure were lucky to get back at all. Going to make a night of it? It's twelve-thirty now."

"Julius," began Mrs. Jack sternly, "did Billy have a colic?"

"I think not—yet," replied her brother cheerfully, warming his hands before the fire.

"Where is Mary?"

"Don't ask me."

"You don't mean she isn't here?"

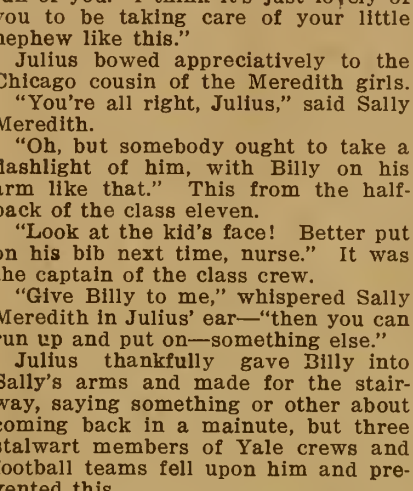
"I haven't been able to discern her presence," said Julius calmly.

"Isn't cook in?" She knows how to look after Billy—she's very fond of him. Why didn't you call her if Billy had a colic?"

"Billy didn't have the colic, I tell you," reasserted Julius, with irritation. "He just simply woke up. I was telling some of your servants—I wanted to go out. The Meredith girls sent for me," he exclaimed in an injured tone, "and I got all dressed to go——"

"You look it," observed Jack with his eyes on Julius' apparel. "Nice dressy front you have on there. Just as well you couldn't go, I should say. You were a touching spectacle in your bath-robe with that waistcoat."

Julius glanced hastily down. He had replaced the bath-robe with a house-coat before going out, which now, falling widely open, exposed to view a white waistcoat with a dark jam-colored imprint of five small fingers, like a



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"Oh—er—" began Julius; but Mrs. Jack was looking at him suspiciously.

"Billy's nightgown was covered with something strange," she said, reproachfully. "And when I came down to get him some milk I saw the dining-room table. Julius, what did you give him?"

"Oh, nothing much," said Julius, with attempted nonchalance, which caused him to look particularly guilty. "I got hungry myself, that's all."

"Julius, tell me instantly what Billy has had to eat. Did you give him bread and jelly—at this time of night?"

"It was a—er—sort of bread and jelly," admitted Julius, making for the stairs. "Good night—I guess I'll go to bed, if it's all the same to you."

"Julius Broughton—was it bread and jelly? And, Julius—don't you think it was a very strange-looking thing for you to be kneeling on the nursery floor in a bath-robe, at Sally Meredith's feet—in the dark?"

"Oh, good night, good night," called back the Yale sophomore, disappearing around the turn at the landing.

LESSON 7

DINNERS USING MEAT SUBSTITUTES

Vegetable Roast
Potatoes Hot Slaw
Date Pudding
Nut Loaf
Beets Potatoes
Carrot Pudding
Salmon and Rice
Peas Squash
Bran Gems
Suet Pudding Tea
Bran Gems

1 c. bran, 1 c. white flour, ¼ c. sugar 1 tsp. salt, 4 tsp. B. P., 1 c. milk, 1 egg, 1 tbsp. butter.

Mix and sift flour, B. P. and salt, add sugar, milk, egg well beaten and melted shortening. Bake in muffin tins.

Suet Pudding

1 c. chopped suet, 1 c. milk, 1 c. molasses, raisins if desired, 3 c. flour, 1 tsp. soda, ½ tsp. cloves, cinnamon, ginger and nutmeg.

Mix and sift dry ingredients, add suet and fruit; mix well and add milk and molasses mixed. Turn into greased mould, cover tightly and steam 3 hrs.

Vegetable Roast

1 c. cold boiled beans, 2 c. bread or cracker crumbs, ¼ c. melted butter, pepper, sage, 1½ c. milk, 2 c. mashed potatoes, salt, 1 egg, onion.

Mix beans, crumbs, milk and potatoes and put through meat grinder, add butter and egg, seasonings. Shape and bake.

Hot Slaw.

Shred 2 qts. cabbage, add 2 tbsp. butter, 2 tsp. salt, pepper, 2 tbsp. vinegar and 1 c. water. Simmer about 1 hr. Serve.

Date Pudding.

Melt ¼ c. butter, add ½ c. molasses, ½ c. milk and 1 egg well beaten, then add 1½ c. graham flour mixed and sifted with 1 tsp. salt and ½ tsp. soda, add 1 c. dates stoned and cut in pieces. Turn into buttered mould and steam 2 hours. Serve with Sterling Sauce.

Sterling Sauce

Work 1/3 c. butter until very creamy, using a small wooden spoon, add very gradually 1 c. powdered sugar. Add 1 tbsp. rich milk or cream, and flavor with 1/3 tsp. lemon extract and 2/3 tsp. vanilla. Garnish with cherries.

Nut Loaf

1 c. chopped nut meats, 1 c. bread crumbs, 1 hard cooked egg, chopped, 1 c. boiled rice, slice of onion, salt.

Mix with one raw egg, shape in loaf. Baste with butter and water and bake in moderate oven.

Beets a la Poitevine.

Boil beets until tender, remove skins and cut the beets in slices. For a pint of beet slices, chop one medium onion and fry in 4 tbsp. butter, add 4 tbsp. flour, ½ tsp. salt. Add 2 c. white broth and bring to boil, let simmer a min. Add sliced beets with salt and pepper as needed and again let simmer 5 min. Finish with 1 tbsp. vinegar, and 1 tbsp. butter. Serve very hot.

Carrot Pudding

1 c. flour, 2/2 tsp. soda, ¼ tsp. salt, ½ c. finely chopped suet, ½ c. raisins, chopped, ½ c. currants, 2/3 c. sugar,

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¾ c. grated potato, ½ c. grated carrot. Mix and sift dry ingredients, add suet and fruit; mix well. Add vegetables and stir until well blended. Steam 2½ hours.

Salmon and Rice

Form freshly boiled rice into flat cakes, brown slightly in fat, on both sides. Place on a warm platter. Warm salmon and spread on rice. Over this pour a white sauce into which have been stirred the whites of two hard cooked eggs, cut in dice. Garnish with yolks.

Steamed Squash

Wash, cut and pare squash and steam until tender. Season with butter, pepper and salt. Mash.

OUR UPSTANDINGS AND DOWN-SITTINGS

To be caught seated at a social occasion when we should be on our feet makes us as uncomfortable as a stranger in an Episcopal church. Every one but our embarrassed selves seems to know when to get up and when to sit down, and we agree miserably with the prayer-book that "we have done those things which we ought not to have done, and left undone those things which we ought to have done."

Such discomfort is needless, for the rules about rising—which, after all, are no more than the custom of well-mannered people—are few, simple, and founded upon courtesy and common sense.

First, there is the question of introduction. A lady should always rise when presented to another lady, unless the latter is much younger, in which case it is quite permissible to keep one's seat and simply bow one's acknowledgment.

When a woman is seated and a man is introduced, she does not rise, unless he is a very distinguished person or a gentleman many years older than herself, to whom she wishes to show deference.

It is not usual to shake hands with a person whom one meets for the first time, except as a mark of unusual cordiality. A hostess, however, should always extend a welcoming hand to her guests, both to those with whom she is already acquainted and to any stranger brought to her home by a mutual friend.

In greeting, she holds the hand palm upward; in bidding farewell, with palm down. On the face of it, this custom may seem an absurdity, but like all rules of good form, it is based upon common sense, for when a guest knows in just what position the hostess will extend her hand, there is no awkward fumbling about before the hands are clasped in greeting or farewell.

At an afternoon affair, when the hostess is pouring tea from behind her tea-table, rising to greet each guest is too awkward to be in good form. In this case, she simply bows, giving her hand if she likes. She also bows her adieux, should a guest leave before the tea-pouring is over.

A man caller should always rise when another guest enters, whether the second arrival be a man or a woman. He should remain standing until a lady has taken her seat, in observance of the rule that a man never remains seated when a woman is standing. This is a courtesy in which no man should grow careless; the act is slight enough in itself, but women appreciate and expect this deference.

A woman is not expected to rise when a later arrival enters, except in the case of a very young girl and a much older woman, when the former does it as a mark of respect. The hostess, however, should always rise to greet her guests, for it is her duty to make them feel welcome and at ease in her home.

When guests rise to go, the hostess rises also, and remains standing until they have taken their departure. And here, let me speak a word about prolonged good-bys.

To keep a hostess standing longer than the few minutes needed to say one's good-bys is one of the most thoughtless discourtesies a guest can commit. Yet how few of us could plead "not guilty" to the charge!

Time and again, guests will rise with an "I must go," which brings the courteous hostess to her feet; then they proceed to pay a second call, while the other guests wait and the hostess tries to conceal her discomfort.

Sometimes the hostess follows her guests to the door, and her courtesy is rewarded by ten minutes of shivering in the cold, while the warmly wrapped guests finish up their visit.

When we go let us go, and have no more last-minute conversations, which leave our hostess with an after taste of weariness and boredom.

At a dinner-party, the hostess, of course, leads the way to the dining-room immediately after dinner has been announced by the maid.

Each man assists his partner into her chair, then remains standing until all the ladies are seated. Should a guest arrive late (though this is considered almost inexcusable at even a semi-formal dinner) the men should rise until the guest is seated.

At the end of the dinner, after the hostess has given the signal to rise, the men remain standing until the ladies have passed out. Then they may either sit about the table with the host for a short time, or follow the ladies into the drawing-room.

Awkward situations sometimes arise when acquaintances meet in a restaurant or hotel dining-room. If a man is dining alone and a lady bows to him, he should simply bow and rise slightly in acknowledgment.

If he is with a party, and a lady and her escort stop to speak to him or his friends, he rises and remains standing until she has passed on. He should also rise if a woman is introduced.

It is courteous for a man to acknowl-

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edge an introduction to another man by rising, but this rule is often waived by men, who are less formal in their relations with one another than woman.

One last word about our children's manners. Nothing so stamps a mother with good taste and refinement as a well-mannered child. Teach your child to rise when he is introduced to an older person, to extend his hand and say distinctly, "I am glad to meet you," or some other polite formula, instead of hanging back and mumbling a few embarrassed words; and when he reaches the awkward, hobbledehoy age, the habit of years will save him many a painful moment.

Teach your boy to rise when ladies enter the room, to remain standing at the table until they are seated, and all the small courtesies which are only quaint and pleasing in a small boy, but by which his good breeding will be judged when he is a man.

CORSETS—HOW TO WEAR THEM

This is how the average woman decides the most important question in dress. She walks into a department store, finds the corset section, and says: "Give me a pair of corsets, twenty-two. Something at about two dollars." Then she takes home what the girl chooses to give her.

You put these corsets on. Nine times out of ten, you grumble at the lacing of them, and, of course, do it in the quickest way. For a day or so you feel uncomfortable, and you look better than you did. But in a week those poor corsets haven't a bit of life left, and you look it. In a month they are hopeless and you know it, but it isn't time to buy a new pair, and so you join the procession of women who do not look their best. In the course of time you cease to care—think perhaps it is your age and let it go at that.

Now the trouble is, in the first place, that you didn't have enough interest to look over the stock. Department stores carry very large stocks of corsets these days, and you wouldn't take the time to interest the girl, who knows a great deal about corsets and your special needs. She it is who could and would help you to find just the right corsets for you.

Then, after getting your corsets, you just put them on and wore them until it was time for a new pair, never heeding the symptoms: a pull here, a drag there; the general uncomfortableness that should tell you that you have on the wrong corset. At night you took your corsets off, threw them across the back of a chair. (Hundreds of women still do this.) And then youwent to sleep, happy to have the uncomfortable things off at last.

If you would have your figure what it ought to be, you should give it the time and the careful attention which you give to your housekeeping.

First, try to find the corset that fits you now—not the one that fitted you a year or more ago. Corsets change a little every year, but the improperly corseted figure changes a great deal in a very little while. Remember, too, that after years of inattention it takes quite a while to produce a really good figure, even with the best corset. Little by little, however, you will see a change for the better. Your corsets will last longer, look fresher and, incidentally, so will you.

The following directions for lacing and adjusting corsets were given by a corset-fitter in a large department store.

"To attain absolute comfort and the necessary foundation for properly wearing one's clothes, the corset must be properly laced and adjusted.

"Use a ten or twelve yard lacer, and, beginning at the top, lace to within two holes of the waistline. At this point, pass the lacer through the second hole and return it through the top hole on the same side, thus forming the loops at the waistline and causing the lacers to cross and hold the flesh in place. Then continue lacing the corset in the usual way.

"It must be remembered that in crossing the lacer to make these loops, it is necessary to pull the top lacer to draw in the lower part of the corset, and vice versa.

"To adjust the corset properly, unlace until the back steels are far apart, hook from the bottom up and adjust the garters, being very careful to have them perfectly perpendicular so that the material may not be pulled to the

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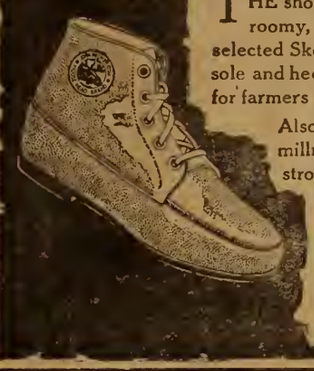

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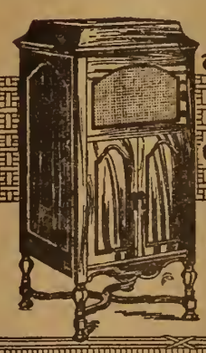
The Simple "Why" of Pathe Superiority

SOME articles achieve fame by their intrinsic merit as viewed by the public. Others by the puff and blow of their producers. The Pathephone success is as simple as it is sure. It is due to its being an improvement upon anything which has come before it or since.

The original Pathe' Freres took the old-time talking machine and developed it until it is now the supreme achievement. Note these improvements: Instead of the old, scratchy, ever-changing steel needles—a genuine polished sapphire ball. Instead of a metal sound chamber—an all-wood one (on the violin principle). Instead of recording in narrow sound waves—a unique Pathe' method with long broad sound waves, more contact, more tone, richer music. Instead of "varnished boxes"—handsome cabinets—in historic period designs. Instead of playing only one or two kinds of records—the Pathephone will play all makes of records.



The Pathephone

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HAD WORST CASE OF CONSTIPATION

DOCTOR EVER KNEW.

Although generally described as a disease, constipation can never exist unless some of the organs are deranged, which is generally found to be the liver. It consists of an inability to regularly evacuate the bowels, and as a regular action of the bowels is absolutely essential to general health, the least irregularity should never be neglected.

Milburn's Laxa-Liver Pills have no equal for relieving and curing constipation and all its allied troubles.

Mrs. F. Martin, Prince Albert, Sask., writes:—"I had one of the worst cases of constipation my doctor said he had ever known, and Milburn's Laxa-Liver Pills cured me of it. My father-in-law had used them, in fact he was the one who gave them to me. A number of people around here use them, and they all say that they are the best pills they ever used."

Milburn's Laxa-Liver Pills are 25c. a vial at all dealers or mailed direct on receipt of price by The T... Limited, Toronto.

right or left.

"Then hook or lace the material below the front steel, and pull the corset well down on the figure, especially in the back, so that the waistline of the corset is exactly where it is intended to be worn.

"Now, draw the loops at the waistline to "set" the corset, being careful to pull down on the loops, and not up. Tie the loops temporarily in front and then draw the hip loops to the proper tightness, tie and slip them under the lacer and back of the corset. Then readjust the loops at the waistline, tie and slip them under the front steel at the top.

"If the garters are not sufficiently tight they should now be readjusted, and when the buckles are set properly, do not change them unless shorter or longer hose are worn. Side and back garters should be slightly looser, as the slack is required for sitting.

"By looking in a mirror when adjusting a corset, it is quite easy to draw the lacers so that the back is perfectly flat, which is the present requirement.

"In removing a corset it should be unlaced. In this way it is ready for the next wearing."

After the corset is unlaced, it should be rolled back carefully, inside out. This, I am told, adds much to the life of a corset.

Of course, you would omit this if your corset were even slightly damp, as it might be on a hot day. In that case, it should be spread out to dry and air.

If it is at all possible, a woman should have two pairs of corsets; one to wear one day and one for the next. Two pairs bought at once and used in this way will give you better service than a pair bought now and then, as actually needed.

By GERTRUDE VIVIAN

Did a Good Turn For an Old Friend

HOW TWO MEN PROVED THE WORTH OF DODD'S KIDNEY PILLS

Henry Burkhart, of Saskatchewan, Sent Dodd's Kidney Pills to Dakota, and His Friend Joins in Their Praises.

Fox Valley, Sask., May 4th, (Special)—"I tell every one that suffers from kidney trouble to take Dodd's Kidney Pills." These are the words of Mr. Henry Burkhart, of this place.

"I took Dodd's Kidney Pills for eight months" Mr. Burkhart continued, "and now I feel as well as ever I did in my life. I also sent one box to a friend who lives in Dakota, and who I knew suffered from his kidneys.

"My friend wrote me to get him some more of Dodd's Kidney Pills, as the doctors could do nothing to help him. He said Dodd's Kidney Pills were the best medicine he had ever taken.

"I would not be without Dodd's Kidney Pills."

In the sparsely-settled parts of the West, where doctors are few, Dodd's Kidney Pills have long held an honored place in the family medicine chest. The conditions which are common to newly-settled prairie countries makes kidney trouble one of the most prevalent ills, and the settlers early discovered the splendid results to be obtained from Dodd's Kidney Pills. Ask your neighbor about them.

LONG LIFE TO YOUR TAILORED SUIT

"This is the third year for that suit of Cecil's," said a cousin to me last year, as I commented on her husband's good-looking clothes. "You want to know how he manages to keep it like new? I have washed it several times in a solution my brothers and uncles have used for years.

"This is the formula:

"Shave half a cake of good white soap into two quarts of boiling water and add two heaping tablespoonfuls of borax. Set on the back of the stove until dissolved and add it to two gallons of tepid water.

"After washing in this solution, I hang the clothes on the line, with the coat on a hanger and the trousers carefully pulled into shape. When almost dry they are pressed. With the aid of a sleeve-board, that is not so hard as it sounds."

The mother of small boys will appreciate this way of keeping them looking fresh and clean. Women's suits may be treated successfully in the same way.

White serge suits are so pretty for spring and summer wear, especially for young girls, yet mothers sometimes hesitate to get them, because they eat up almost their original cost in cleaner's bills.

A white serge suit can be kept in good condition a whole season simply by getting a ten-cent cake of magnesia. After brushing the suit, rub the magnesia on all soiled places, until the fiber of the cloth is full. Leave it there until the suit is to be worn again, when the magnesia should be shaken or brushed out.

Prepared chalk is almost as good as magnesia. It is better to give your suit this little care each time it is worn than to have to send it to the cleaner often.

The neck of a blouse or the white collar on a serge dress may be kept clean by rubbing a little prepared chalk on the soiled places when the garment is removed.

Leave this on until the blouse or dress is to be worn again, then brush it off and the spots will have gone.

DON'T THROW AWAY POULTRY FAT

Don't throw away the body fat of poultry, advise home economic experts of the Department of Agriculture. In so doing you are wasting fat which French housewives consider excellent for making cakes and puff paste. So great is the demand for this fat in New York and other large cities at certain times in the year, that it brings as high as $1.10 per pound, and many people make a business of collecting it from butchers and others who dress poultry.

To prepare poultry fat, dry it out in a double-boiler until the fat just melts away from th etissues and can be poured off. Then keep it cool and covered, like butter. Chicken fat, like goose fat, may be used for shortening in cakes which are highly seasoned or spiced; it may further be used for frying the chicken itself, and in the preparation of many other meats and vegetables for the table.

You will enjoy cooking that big meal on this family size oil stove. Everything so convenient. Each burner controllable to any desired heat. Equipped with the perfect baking "Success" oven. Booklet free.

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OIL COOK STOVES Wickless, Valveless, Blue Flame, Automatic
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GUARD YOUR CHILD'S EYES

No child should be permitted to attend school where there are children with bad cases of "sore eyes," declare Government educational authorities. "Better that the child miss a term of lessons than the use of his eyes."

"Teach your child to bathe tired eyes with a solution of table sale in cold water and refrain from rubbing or pressing his eyes. Eye-rubbing, nose-picking, ear-scratching, nail-biting, and picking at scratches or pimples are exceedingly dangerous habits against which the mother should set up strict prohibitions early in the child's life.

"Another phase of care of the eyes which should not escape the mother is the provision of adequate and proper illumination for home study. Where oil lamps are used they should have large wicks and clean chimneys. Ground glass shades should be provided to soften the light.

"The table at which the child studies should be covered with a dull-surfaced dark cloth, green or gray felt, or some similar cheaper material. If gas or electricity is used, the child should have a good table lamp with a shade adjusted low enough to prevent direct rays striking into his eyes.

"In reading, the child should sit in a comfortable chair with left shoulder and back turned to the light and book held in hand. Bending over the table on which the book rests not only injures the eyes, but endangers the spine and lungs."

YOURS TO ENJOY

You'll Like the Flavor

PRACTICE MAKES PERFECT

A young Burnley weaver, according to an English paper, was taking her little baby to church to be christened.

Its father had been in the trenches for three months, and it was impossible for him to get home for the ceremony.

The baby smiled up beautifully into the minister's face.

"Well, madam," said the minister. "I must congratulate you on your little one's behavior. I have christened two thousand babies, but I never christened one that behaved so well as yours."

The young mother smiled demurely, and said:

"His grandad and me hev' bin practisin' a wi' him for a week wi' a bucket of water!"

THE CROWNING HARDSHIP

Of the many witticisms attributed to the late Joseph H. Choate, our favorite is his famous toast to the fair sex, given some years ago at a dinner of the Pilgrims:

"Women, the better half of the Yankee world, without whose aid the stern Pilgrims never could have achieved the historic title of the Pilgrim Fathers! The Pilgrim Mothers were more devoted martyrs than were the Pilgrim Fathers, because they not only had to bear the same hardships that the Pilgrim Fathers suffered, but they had to endure the Pilgrim Fathers besides."

SOME THINGS TO REMEMBER IN MAKING FRUIT CAKE

Buy the best quality of everything.

Cream the butter and sugar thoroughly.

Have fruit well floured so that the pieces will separate.

Mix thoroughly so that the fruit and nuts will be evenly distributed through the dough.

Line pans with oiled paper and bake in a very slow oven.

A metal or glass spoon is easier to use in making these cakes than is a wooden one, as this heavy mixture has a tendency to gather on a wooden spoon.

HER IDEAS OF MEN

A little girl wrote the following composition on men:

Men are what women marry. They drink and smoke and swear, but don't go to church. Perhaps if they wore bonnets they would. They are more logical than women, also mor zoological. Both men and women sprang from monkeys, but the women sprang farther than the men.

CLEANING SOILED RAINCOAT

Choose a fair day so that the work may be done out of doors. Dip the coat in cold, soft water and spread out on a large board or table. Scrub well with a stiff brush, using soft water and white soap; when thoroughly cleaned dip the coat several times in clear water until all suds are removed. Do not wring .ubt hang in the air to drip dry.

CORN MEAL GRIDDLE CAKES

Sift together one cupful each of corne meal and white flour with two heaping teaspoonfuls of baking powder and one-half teaspoonfuls of salt. Add one tablespoonful of molasses and one pint of milk. Mix well and bake on a hot griddle.

JOHNNY CAKE

To one cupful of yellow corn meal add one cupful of white flour, one level teaspoonful of salt, one well-beaten egg, one cupful of sour cream in which one teaspoonful of soda has been dissolved, and one-half cupful of molasses. Beat well and bake in a greased pan in a hot oven.

CORN MEAL PEACH PUDDING

Mix together one cupful each of corn meal, whole wheat flour, and white flour, add two cupfuls of thick sour milk in which one teaspoonful of soda has been dissolved, one-half level teaspoonful of salt, a large half cupful of molasses and one pint of canned peaches cut in small pieces and drained of their juice. Steam three hours and serve with cream or sweet sauce.

CORN MEAL MUFFINS

Sift together one cupful each of white flour and yellow corn meal with two and one-half teaspoinfuls of baking powder and one-half level teaspoonful of salt. Add two well beaten eggs, two tablespoonfuls of sugar and two tablespoonfuls of butter, melted. Add one cupful of sweet milk and beat well. Bake in greased muffin- pans in a hot oen.

CORN MEAL FRITTERS

To one pint of corn meal mush add two well beaten eggs, one-half cupful of milk, one teaspoonful of baking powder, one-half teaspoonful of salt and flour to make a drop batter—about two cupfuls.

Beat well and fry in butter or fat until nicely browned.

Sprinkle with sugar and cinnamon and serve.

CORN MEAL GEMS

To two wellbeaten eggs add one cupful of thick sour cream, three tablespoonfuls of sugar, one cupful each of corn meal and white flour, and one-half teaspoonful of salt. Beat well and then add one teaspoonful of baking soda dissolved in one tablespoonful of warm water. Bake in greased gem pans in a hot oven.

LIME AND ITS USES IN AGRICULTURE

(Continued from page 467)

not be due to acidity of the water or filter paper used, a blank test should be made in the same manner, but using no soil."

Forms of Lime

In the above discussion we have used the term "lime" without designating any particular form. It now remains for us to deal with the various forms of this materlal on the market.

There are several forms of lime that may be used for agricultural purposes. These are quicklime, air-slackd lime, hydrated lime and ground limestome.

Quicklime must be slaked before it can be evenly distributed over the ground. The best plan is to distribute it over the field in small heaps much as is done with stable manure. Fifty pounds to four square rods will give an application of one ton per acre. If water amounting to one-third the weight of the lime be added and the heap covered with about an inch of soil, the lime will soon slake, when it may be spread with a shovel. This latter operation is not a pleasant one, but if the slaked lime is mixed with earth and a damp day chosen for the work, it may be accomplished without any great inconvenience.

Hydrated lime is simply the quicklime slaked, screened and bagged. It is, consequently, more expensive, but its action in th soil will be the same as the quicklime slaked in the field. Generally speaking it is too expensive a form to use for agricultural purposes. Where a small amount is needed for a garden, it would be a very convenient form to use.

Air slaked lime is quicklime that has been allowed to slake without the direct addition of water. It differs from the freshly slaked lime in that it has taken up some carbon dioxide from the air, and patr of the lime has passed back into the carbonate condition. The amount that has been thus changed will depend upon the length of time the lime has been exposd to th air.

Ground limestone is simply the limestone rock, similar to that which is burned in the preparation of quicklime finely pulverized. Naturally the more finely it is ground the quicker it will react in the soil. The coarser-ground material will remain an active agent fo ra longer time in the soil. Consequently, it is not essential that the whole of the material be very fine. Generally speaking, if the rock is so pulverized that the larger particles are no bigger than flax seed and all the fine material that would naturally be formed in the process of grinding it remain in it, ti will be fine enough. The very finely pulverized material costs more to prepare and is more difficult to handle, and does not serve the purpose any better; for applications of ground limestone only need be made at intervals of four or five years. The finest material will come into use first and the coarest later. At the same time, it may prevent a too rapid leaching away of the material.

Gypsum, or sulphate of lime, is found in beds or deposits in various parts of the Dominion. When pulverized, it is very commonly called "land plaster." It is a valuable source of lime, as the compound is more soluble in water than the carbonate of lime, but it does not neutralize the acid or sour soils, and can not therefore, take the place of the above mentioned forms of lime for this purpose. In other respects, gypsum, or land plaster. may substitute lime, and being more soluble, may be applied at a much less rate per acre. It also contains some sulphur, which some authorities now think may have a special value in the soil.

Marl is found in beds or as deposits, varying from a few inches to several feet in depth, and it is usually covered with a layer of partially decayed organic matter, commonly called muck. In some cases the deposit is practically pure calcium carbonate; in other cases it will be found mixed with clay, sand or organic matter. Its value for agricultural purposes depends upon the calcium carbonate it contains. It may be drawn directly from beds and applied to the land. or it may be taken out and dried and pulverized, when it may be used in the same way as ground limestone. It is easily reduced to a fine powder, and is a valuable source of carbonate of lime for agricultural purposes.

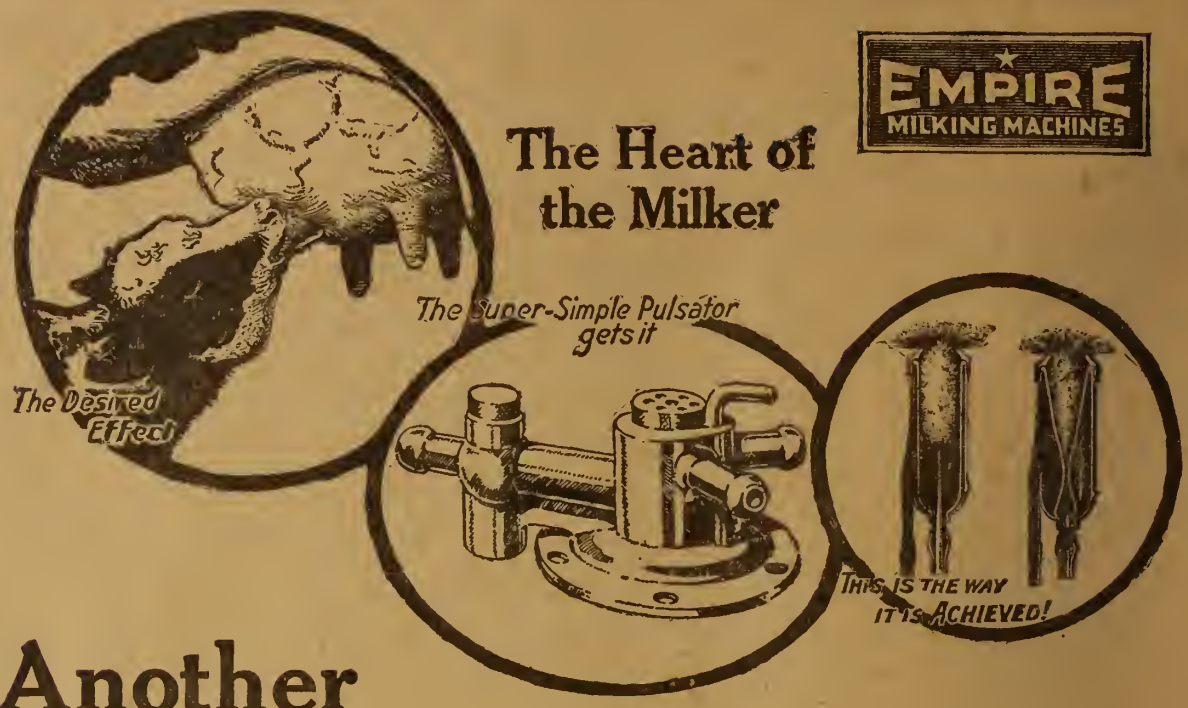
Lime kiln refuse is a product from the lime kiln and consists of unburnt limestone, quicklime, air-slaked lime and sometimes may contain wood ashes, clay or asnd. The ashes are derived from the wood which was used as fuel in burning the lime. This material is somewhat variable In composition, but it is frequently a cheap source of lime, and when wood ashes are mixed with it, there may be considerable potash present.

Gas lime is a by-product in the purification of illuminating gas. It contains certain sulphides of lime which will destroy vegetation, and hence the immediate application to the soil is not advised. But if it is put out in small heaps or spread out in such a way that the air can get through it, these harmful sulphides will in two or three months' time be converted into sulphate of lime. It is then essentially a mixture of carbonate of lime and sulphate of lime or gypsum, both of which have agricultural value and may be used fo rall the purposes for which ground limestone and gypsum are employed.

Acetylene tank residues are essentially calcium hydroxide or slaked lime. It will probably be partially carbonated. depending on the length of time it has been exposed and bay be used for the same purposes and at the same rate per acre as described above for corresponding products.

Equivalent Weights

In dealing with these various forms of lime, it is well to remember that 56 pounds of quicklime will have the same action, especially in correcting acidity, as 74 pounds of slaked lime and 100 pounds of carbonate of lime,



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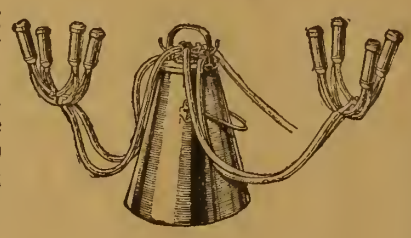
FOR months we have been experimenting—investigating—testing—fighting, to find a way to make the Empire Milking Machine, already the unquestioned leader, still more efficient for the dairy farmer.

THE BATTLE IS WON.

We have given the milking machine a new heart—the pulsator is the heart of the milking machine—and the result of our experiment, the new Empire Super-Simple Pulsator, is the most wonderful development since the invention of the Empire—the competent milking machine.



To be successful a milking machine *must* have a perfectly acting pulsator to cause the alternating action of suction and massage on the teasts (to imitate the calf's "suck and squeeze") to occur with absolute regularity; and to make the change from suction to massage and back again instantaneous.

The Empire Super-Simple Pulsator, the pulsator without a piston, does that and more. It really is *Super-Simple*—so simple that it can be taken apart and put together again in less than two minutes. ***It has but five moving parts; nothing to wear out or "get out of gear." It cannot lose vacuum, so its action is perfect.***

It places the Empire Milking Machine immeasurably in advance of all competition. Your cows should be milked by an Empire Milking Machine with the new Super-Simple Pulsator. It will milk them more rapidly than ever—it will solve your labor problem—it will increase milk production at a decreased cost; it will transform milking from drudgery into a pleasant chore.

Our factory is overtaxed by the increased demand for Empire Milking Machines, so go to your dealer at once, see the new Super-Simple Pulsator and tell him to order your Empire outfit without delay; or write for Catalog K

THE EMPIRE CREAM SEPARATOR CO. OF CANADA, LIMITED

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or ground limestone; or one ton of quicklime will be the equivalent of 2,643 pounds of hydrated lime or 3,571 of carbonate of lime. In general practice, two tons of ground limestone is considered equal to one ton of quicklime. As has been pointed out, air-slaked lime is partly slaked lime and partly carbonate of lime, and is, consequently, a mixture of the hydrate and carbonate of lime. Its value will, therefore, be intermediate between that of freshly slaked lime and the carbonate, that is 56 pounds of quicklime will be equal to a weight of air-slaked lime between 74 and 100 pounds. From the above data it will be seen that if quicklime is worth $5.00 per ton, ground limestone, equally free from impurities, would be worth $2.80 per ton and slaked lime $3.80 per ton. Furthermore, the cost of transportation of the ground limestone will be approximately double that of the quicklime.

Which Form Should be Used

The cost of the material, however, is not the only factor to consider in deciding which form of lime shall be applied. The character of the soil and the rapidity of action required must be considered.

Carbonate of lime, that is, ground limestone or marl, is much milder in its action than the freshly slaked lime, and is therefore the better material to apply where rapid action is not an important point, and especially on light sandy and gravelly soils. These soils are usually poor in organic matter, due to the free oxidation induced by their open porous nature. Freshly slaked lime is generally credited with hastening this oxidation, and on light soils, would thus cause too rapid a dissipation of this valuable material. On heavy clays, freshly slaked lime may be used to advantage. There is not the same fear of unduly hastening the decay of the organic matter and its action in causing flocculation of the clay particles will be more rapid and the improvement in the physical condition of the soil more quickly obtained. On soils between the sands and clays, experiments in other countries indicate that the carbonate of lime will probably give the best results through a term of years, although the returns for the first year or two may be in favor of fresh burned lime.

For mucks and peaty soils that may be decidedly acid, the fresh slaked lime is to be preferred. Quite frequently, it is found that the organic matter in ethse soils is not sufficiently decayed to give the best results in crop production, consequently, if the lime hastens the decay, an improvement in texture will be effected as well as the acid neutralized.

Amount of Lime to Apply

The amount of lime that should be applied naturally varies with the nature of the soil, and the degree of acidity. We have generally recommended one ton of fresh lime, or two of ground limestone, per acre. This is probably enough for light soils that are not very acid, but experience is showing us that much heavier applications may be made on clays that show acid with lit- uudhhuuuuuuuuuuuuuuuu iMY mus paper. Too heavy dressings with fresh lime tend to sterilize the soil for a time, that is, the lime checks the life process of the organisms within the soil. There is, however, no fear of this with the carbonate of lime. On light soils it is safe to apply from one to two tons of the ground limestone, and on clay the same amount of the fresh lime, or double that amount of limestone dust. But in some cases the clays may be so sour that much heavier applications are required to neutralize the acid present and give the maximum results.

The Time to Apply Lime

Regarding the time of application, due consideration should be given to other necessary farm work. Lime is not for the sole benefit of any particular crop, but for all the crops in the rotation, although its greatest influence is upon the leguminous crops. A good plan is to apply the limestone dust after plowing and before preparing the seed bed for the legumes. The main essential is to get the limestone on the soil, and convenience or economy in getting the work done is usually the factor which should govern the time of application. There is no reason why limestone dust, and especially limestone screenings, should not be applied in the winter, provided the snow is not too deep that the material can be evenly distributed, and that the land will not be plowed in the spring.

How to Spread the Limestone

The main point is to get the material evenly distributed over the ground. It may be spread with a shovel either directly from the wagon or from heaps placed at regular intervals over the ground. Possibly it may be applied by means of a grain drill, or the manure spreader; but undoubtedly the most convenient method is to use the spreaders made for the purpose. In a recent bulletin Dr. Hopkins of Illinois describes how to make a "home-made" spreader which he considers better than those on the market, especially where heavy applications of the ground limestone have to be made. The instructions are as follows:—

"Make a hopper similar to that of an ordinary grain drill, but measuring 8¼ feet long, with sides at least 20 inches wide and 20 inches apart at the top. The sides may be trussed with ⅜-inch iron rods running from the bottom at the middle to the top at the ends of the hopper. Let the bottom be 5 inches wide in the clear with 2-inch holes 5 inches between centres. Make a second bottom to slide under the first on straps of iron 10 inches apart, which should be carried from one side to the other under the hopper to strengthen it, also with holes to register. Both bottoms may be of sheet steel or the lower one may be of hardwood, reinforced with straps of iron if necessary.

"To the lower and movable bottom attach a V-shaped arm projecting an inch from under the hopper, with a half-inch hole in the point of the V, in which drop the end of a strong lever, bolting the lever loosely but securely

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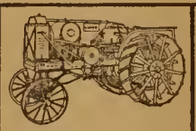
GIVE machines correct lubrication and they behave well. You get smooth-running, quiet engines and full rated horse power day in and day out. But you must humor them. If you are burning kerosene in your motor instead of gasoline, a special lubricant will probably be necessary to meet the changed conditions. A loose bearing and a tight bearing require different treatment. **There is a correct lubricant for every mechanical need.**

At Imperial Oil stations in every part of Canada, you can get the just-right lubricant for every need and service.

All Imperial lubricating oils are sold in steel barrels and half-barrels—convenient and economical. There's no waste. You use every drop you pay for; and you are sure it is uniform and clean.

A Correct Lubricant for every Farm Machine



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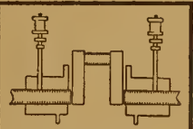

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For Grease Cup Lubrication of Bearings
a clean solidified oil high melting point

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to the hopper with a single bolt, and fasten to the top of the hopper a guide of strap iron in which the lever may move to regulate the size of the opening by sliding the lower bottom. Make a strong frame for the hopper, with a strong, well-braced tongue.

"Take a pair of old mowing machine wheels of good size and with strong ratchets in the hubs, and fit these to an axle of suitable length (about 10 feet) and 1⅜ or 1½ inches in diameter. The axle should be fitted with journals bolted to the under side of the frame. Make a reel to work inside the hopper by securing to the axle, 10 inches apart, short arms of ⅝-inch by 1-inch iron and fastening to these arms four slats or beaters of ⅝ by ¾ inch iron about an inch shorter than the inside of the hopper, the reel being so adjusted that the beaters will almost scrape the bottom but will revolve freely between the sides. The diameter of the completed wheel is about 5 inches and it serves as a force feed.

"Hundreds of these 'home-made' machines are in use, and they are usually more satisfactory and more durable than anything on the market. The cash expense for such a machine has varied from less than $10 to more than $30, depending on how much of the materials and labor must be paid for. Farmers with some mechanical skill may hire only the necessary blacksmithing."

Experiments with Lime

We have placed very few experiments with lime with the idea of gathering actual weight of increase produce. This was partly because the soil on this farm does not need lime and gives no response to its application, and partly because of the difficulty of carrying out co-operative experiments that extend over a number of years. In 1913 we did get some actual figures from an experiment in which quicklime was applied at the rate of one ton per acre, to a sour loamy soil that was to be planted with corn. The unlimed check plot gave a yield of 690 pounds of crop, the limed plot gave 1,865 pounds.

Experiments on the light sand plots in Norfolk County, Ontario, showed that the limed and manured plots gave an average of two tons more potatoes per acre than where manure alone was used. These are very large increased yilds, but we must remember that when a soil is sour, it is a waste of time and money to cultivate until this is corrected, for the economic use of every other fertilizing material, including manure, depends upon the lime supply.

There should, however, be little need of demonstrating the fact that lime will improve soils deficient in this constituent. We have, consequently, spent more time in trying out some of the cheaper forms of lime that can now be procured. Two years ago, and again last spring, we had a few carloads of limestone screenings from stone-crushing plants, applied. This is the dust and finely broken stone which is sifted out of the crushed stone before shipping. A part of this is fine enough for agricultural purposes, but a large part is too coarse to effect any immediate results. At one quarry we were able to procure screenings from which two grades of coarser particles had been removed. The remaining material is so fine that 75 per cent. of it will pass a 10-mesh sieve, and 20 to 25 per cent. a 100-mesh sieve, or a sieve with 10,000 openings to the square inch. As this limestone dust can be procured for very little more than cost of loading, we had a few car loads applied experimentally last spring. It was expecter that this material would be slower in its action than fresh burned lime or the specially prepared and more finely ground limestone. Many of the experimenters reported that the season was so wet that they had little chance of judging results, and generally speaking it appeared as though where the dust was applied at less than three tons per acre, there was no appreciable result. However, where for any reason it was applied in heavy dressings, good results were plainly visible even the first year, both in the physical state of the soil and in the yield of crop. The effect of this application will probably be more plainly seen next season.

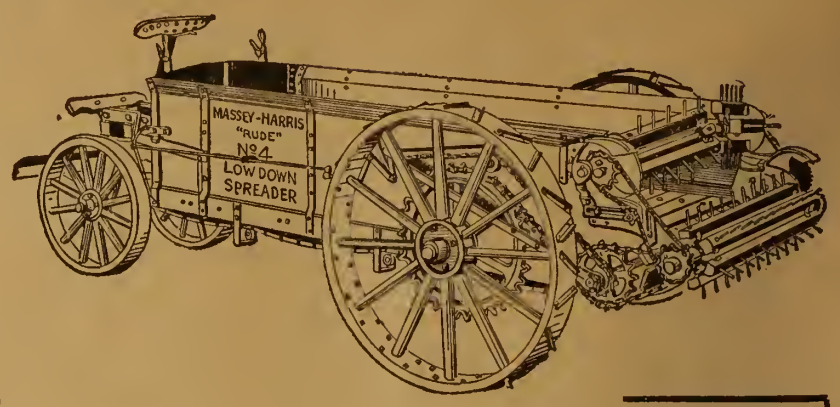
When we commenced experimenting with limestone screenings, there was, so far as we were aware, no home-prepared ground limestone for agricultural purposes on the market. Now there are several firms producing this material. Our experience with the screenings leads us to think that, while they are a cheap material, it will not pay to purchase these, even at the low price, and pay the long freight haul. The finely ground limestone is much quicker in its action and may be purchased either in bulk or in paper or cotton sacks. When bagged it comes under a higher freight rate than the screenings, which are shipped in bulk in open cars. It is however, more conveniently handled and it si possible to purchase a few tons, whereas the other must be shipped in carload lots. The bagging must, of course, increase the cost of the material.

As stated earlier in this article, our experience leads us to believe that in som parts of the country the soil is so sour that heavy applications of lime are needed to correct it. This state exists chiefly in clays and muck soil. We have under experiment now some muck soil which is used for producing onions and on which the growth was not satisfactory. Analysis shows that it carries sufficient acid to require ten tons of freshly burned lime to neutralize the acid in the soil one foot deep over the acre. On this we have applied quicklime on small plots at varying rates up to ten tons per acre and the ground limestone up to twenty tons per acre. A similar experiment has been placed on a heavy clay soil. An-

MASSEY-HARRIS SPREADER

Low Down

Wide Spread



Here is a Spreader that is low-down, but not too low—plenty of clearance under the Frame.

It is a Wide-Spread Machine—spreading full seven feet wide, although the Box measures only 3½ feet.

Ample strength is secured by making the Frame of Steel—heavy 4-inch Channel Side Sills with Steel Cross Sills, forming the strongest Frame ever put on a Spreader.

The Simple Chain Drive does away with all Cogs, Clutches, and Springs, and when out of gear no parts of the machine are running to cause wear.

The Upper Beater is in two sections, set at an angle to spread the load out beyond the Wheels.

The Simple, Direct Drive—the Divided Beater and small size of same—the taper shape of the Bed—the Broad-Faced Wheels—the careful fitting of all parts—these combine to secure light draft.

For Illustrated Booklet, ask the Local Agent, or write nearest Branch stating where you saw this ad.

MASSEY-HARRIS CO., Limited

Head Offices: Toronto.

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Agencies Everywhere

other season's observation on the experiments now placed with the screenings, ground limestone and with quicklime, will be of interest. In the meantime we are of the opinion that it will pay farmers whose lands are sour, and who live close to stone-crushing plants, to haul some of the screenings on to their ground, and give it a trial. Those who have to bring in either the ground limestone or the quicklime by freight, should ascertain the nearest source of supply, as otherwise the cost of hauling may unduly increase the cost of the material.

Investigate the limestone deposits in your vicinity and get in touch with your local Department of Agriculture, as to the best means to make use of it.

—Extracts from a Bulletin by Prof. Harcourt, O. A. C., Guelph.

THE GREAT NEGLECT IN SHEEP HUSBANDRY

(Continued from page 463)

the province are docked and castrated. On account of the above we figure on deducting about ¼c. per pound on all the buck lambs after they get pretty well grown."

"Might state that the percentage of lambs not trimmed that I am handling would be about 30 per cent; the reduction in price runs about $1 per cwt., due to omission of castration."

"The percentage of lambs coming to market here not catsrated is about 15 to 20 per cent. Good ewe and wether lambs weighing from 80 to 90 pounds each are selling here now at 8 cents per pound. Heavy buck lambs sell at 6¾ cents a pound, and these is also the reduction in price made by the buyers."

"This season's lambs offered for sale up to October 1 showed about 75 per cent bucks; since October 1 about 25 per cent bucks.

"This pronounced variation in periods is undoubtedly due to the fact that on October 1, 1913, there was a ruling made at the Live Stock Exchange, Toronto, to deduct 75 cents per head on all buck lambs. In the early part of this season the inspection was discontinued and has not been re-established. Our assumption is that the shippers generally understood it would be established October 1, which is the reason for shipping buck lambs prior to October 1. The fact that the ruling was established last year undoubtedly has been the means of increasing castration by the raisers of the country."

"We judge about one-third of our early native lambs which arrive at this market during July, August and September have not been castrated nor docked. However, the balance of the year the native lambs are practically all castrated.

"In regard to our western range lambs will add, that it is very seldom that a lamb is found which has been neglected in either regard and we find them much more desirable, from not only a killr's standpoint, but for feeding purposes as well.

"Your campaign along these lines should receive the approval and co-operation of every farmer throughout Canada, as it will mean dollars to every man who raises lambs."

"We think that about 25 per cent of the lambs coming here are not docked. Of course this is only a guess, as we have not taken the necessary pains to know definitely.

"Regarding the reduction in price due to the omission of castration we would say that after the first of September, buyers of lambs would give ½c per pound and upwards for ewe and wether lambs than they would for bunches of buck lambs. We are getting a bigger percentage of castrated lambs this year than we were last year, but there are still a large number of lambs coming here which should have been castrated."

"We find that practically 40 per cent of the lambs coming to our market are not docked nor castrated. On an average they sell at from 50 to 75 cents per cwt. less than ewes and wethers.

"At the present time there is a marked difference. Ewes and wetaers have been bringing this week from $7.90 to $8.10 per cwt., while ram lambs have been bringing from $6.75 to $7 per cwt."

While the prices quoted in the foregoing letters are those of three years ago, the fact remains that the factors governing these prices are just as potent and more widely recognized now than they were then.

Do not neglect to dip your sheep and lambs, it will mean more money in your purse next fall.

CHEVROLET

Economise
IN
TIME MONEY ENERGY

Buy a Chevrolet Four Ninety

WARTIME demands that you accomplish more in less time—that you speed up on things that count. A motor car is essential but you must buy the car representing the best investment from every standpoint. When you buy an expensive car you roll your dollars away. When you buy too cheap a car you are not economical. The Chevrolet is the choice of business and professional men who study values.

CHEVROLET MOTOR COMPANY
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MODEL 490-A $825. *f. o. b. Oshawa*

There is a Chevrolet Show Room in Your Vicinity
Call and See the Latest Chevrolet Models

$19,550 PAID FOR BULL CALF

A joint sale of Shorthorns was held at Penrith, Scotland, last week. Prices were on a high level, and many animals were bought for export. The record price of $19,550 was paid for a bull calf. Ninety-nine females averaged $541 and 260 bulls $555.

THE UNITED FARMERS OF N. B. HOLD MONSTER CONVENTION

(Continued from page 469)

tell whether a man is a hopeless case or not. They put him in a tank and turn on the water. Well the water gradually rises and rises. When it gets about around his neck they hand him a little dish. If he starts to bale furiously with the dish instead of turning off the tap. he is hopeless. I do not think we are hopeless.

Our politics are wrongly divided. To have unity we must not have grit and tory. There is a man from Nova Scotia, President of our branch, R. W. Burnburg He tells a rather good story. He says that the farmers work on an average of 11 hours a day. The average town man works about eight hours a day. That makes a difference of three hours a day. Now a farmer works between twenty and sixty years around the farm. Say a farmer works for forty years, three hours a day more than anyone else, how much is he worth more than anyone else? He makes twenty cents an hour, that is sixty cents a day for the entire three hours for forty years. How much do you think it would amount to at compound interest at three per cent?—Forty three thousand dollars. Do you know any farmer who has forty three thousand dollars for his spare time?

I was at a meeting not long ago in St. Catherines, the garden of Ontario, where land is worth two thousand dollars an acre. The farmers there had a meeting to discuss whether they would pull out their fruit trees and grape vines or not. My friend, Mr. Haste, had seventy acres of fruit land. He had all his grape vines pulled out. He was going to buy dairy cows and run a dairy farm. He said there was too much work to fruit at a certain time of year. I said never mind there is too much work to cows all the year around. I said supposing your land costs a thousand dollars an acre and you grow oats and barley on that land, when do you suppose you will get the interest on your investment. "The truth of the matter is," he replied, "I never did get it." How many men have had returns from their investments. Only a few of you who are potato kings in this section of the country.

We must be organized so if we desire to get what we want, United Farmers can lift up its voice. The United Farmers of British Columbia, and you United Farmers of New Brunswick, I hope you will go into this thing with the same interest as the western organizations of farmers, and bring in Prince Edward Island and Nova Scotia. Then we will have the nine provinces organized and then the government must consider agriculture. We will not then take any handouts. We will fight with one front and not put up our fight single handed, as the United Farmers of the Dominion of Canada, and I hope our line will reach from the Atlantic to the Pacific.

I was sent down here by the Council of Agriculture. They are paying my railway fare and hotel expenses. They have such an interest in you that they sent me down here not because I was the best man, but because I was the nearest. When we get this spirit from the Atlantic to the Pacific we will get together and it is time we did so. The membership represented in this Council at the present time is seventy-five thousand farmers. Saskatchewan is ahead of us; Ontario is ahead of Manitoba; Alberta is also ahead of us, and I hope that New Brunswick and Nova Scotia will soon be ahead of all of us. We hope to have a man in Ottawa at the time the House of Commons is in session, a man who will watch our interests and we will keep a man there the same as the Manufacturers keep their man thre. The only say we can do this with is money. We cannot get something for nothing. Individually we are poor, but we are not poor collectively. We are the bon of the country if we only thought so. Everywhere we find farmers apoligising because they are farmers. We are the people. We are next to nature. We have in our county of Wellington the agricultural college of Guelph. About twenty-five thousand people visit this every year. There are about twelve thousand inhabitants, and to look after all the twenty-five thousand farmers who visit that city every day, it has never been necessary to call in an extra policeman. The agricultural people are law abiding. If we were not, we would not have had the patience we have had all these years.

At the first meeting of the Grain Growers in Winnipeg, five hundred delegates were present. Before the meeting the secretary, Hon. T. A. Crerar, told me that they had lost one quarter of a million dolalrs through grain going through to Liverpool. I said to him, "What are you going to do about this, will you tell them." He said, "Yes, I have faith in the farmers." He told the farmers present he had lost $250,000.00 and all he had to

It's Cheaper to Paint than Repair

YOUR barn—if it is four years old or older—is worth at least 50 per cent more today than when it was built. Lumber and cement are so high that it would cost half-as-much-again to build this year as it did in 1914. So it is obvious that either a new barn or an old one is today so valuable a property that its owner *must conserve it* unless he is committed to a policy of wilful waste. Keep your barn—and *all* your buildings—protected. And let your paint-protection consist of an economical paint. Use the barn paint that goes farthest—lasts longest.

Imperial Barn Paint

This paint, while not to be recommended for a house, is a splendid, economical protection for your barn, roof, fence or outbuildings. It is made from good materials, "covers" well and dries hard.

Ask your dealer for Color Card.

Other B-H Products of Sterling Worth

For the Exterior of Your Home

Be satisfied with nothing less than *B-H "English" Paints.*

Years ago we established as their basis this standard formula:

70% Pure White Lead
(*Brandram's Genuine*)
30% Pure White Zinc

Today, with white lead so expensive that many manufacturers are using as little of it as possible, we are still committed by our hard-and-fast guarantee, to the use of this same proportion—thus ensuring users of this brand the same wonderful finish and the same dependable durability that have made *B-H "English"* pre-eminent among paints for exterior uses.

For Interior Varnishing

The name *"CHINA-LAC"* suggests a china-like finish—and that is just the kind of finish you get from the use of *China-Lac*—the perfect varnish stain. Being transparent, it preserves the "grain-beauty" of the natural wood—at the same time giving splendid color effects. Easy to apply—not affected by either hot or cold water.

For Staining the Roof

Our *"ANCHOR"* Brand Shingle Stains are specially prepared to preserve wood from decay. Easy to apply on rough surfaces, they give a better effect than paint. Shingles may be dipped or stain brushed on.

For Varnishing a Floor

Our *"FLOORLUSTRE"* finishes a floor with a lustrous coating of the most durable enamel. Will stand hardest wear—will not show scratches. Excellent for interior floors.

For Porch Floors, Ceilings, Posts, etc., where surface is exposed to the weather, use *B-H Porch Floor Paints.*

BRANDRAM-HENDERSON LIMITED
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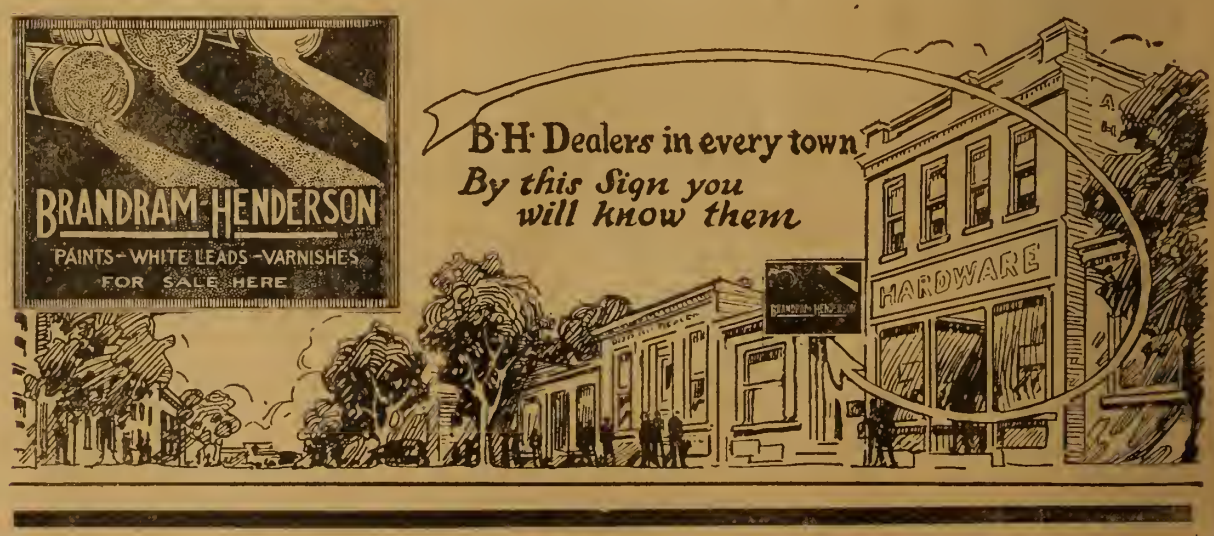
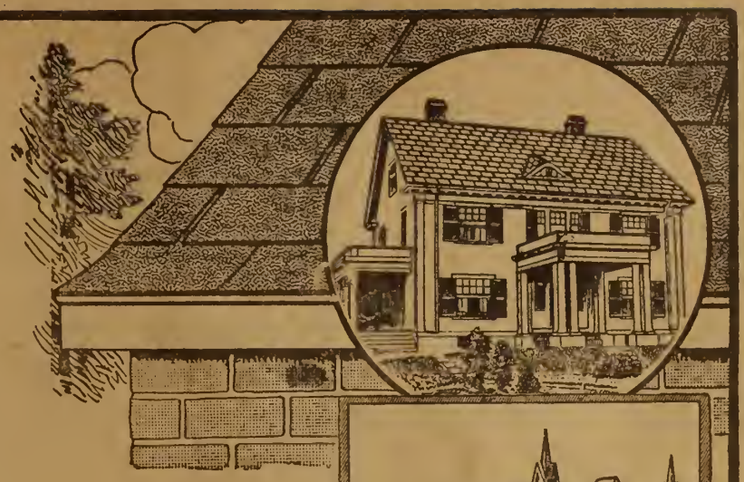


Artistic and Economical

There is a beauty and individuality to a roof covered with Brantford Asphalt Slates that appeals to all lovers of the artistic. There is an economy in their low cost per year of service that appeals to all seekers of a sound roofing investment.



Brantford Asphalt Slates

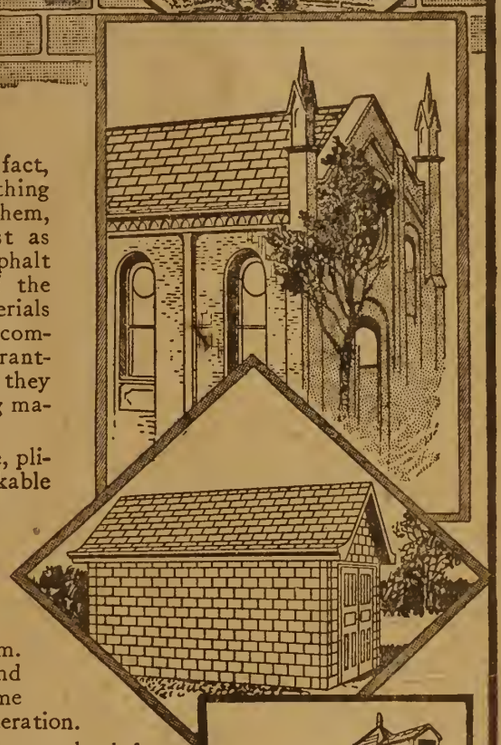
are made of a special grade of long fibred felt thoroughly saturated and coated with asphalt, on top of which is a surface of crushed slate.

The asphalt is a blend of soft and hard asphalts, tempered to resist the extremes of the Canadian climate. The slate is the real quarry slate and its colors of reddish brown and dark green are the natural colors of the slate and are therefore unfadeable. Brantford Asphalt Slates never require painting. It would be hard to imagine a more durable roofing, let alone make one.

Brantford Asphalt Slates are absolutely water-proof. They do not absorb moisture, therefore are not alternately swelling and drying out.

They are wonderfully fire-resistant. There is no record of a fire ever starting on a roof of Brantford Asphalt Slates. You can put a whole shovelful of red hot coals on a roof of Brantford Asphalt Slates and, while the heat from it might melt some of the asphalt, the slates would not ignite.

The cost of these slates is very moderate—and if you have an old, leaky roof you can reroof it with Brantford Asphalt Slates without requiring any additional braces. And the slates will make a completely watertight and permanent roof. In fact, there is practically nothing to wear out about them, and they should last as long as the walls. Asphalt and slate are two of the most enduring materials known to science, and combined as they are in Brantford Asphalt Slates they form the ideal roofing material.



Being regular in size, pliable and nothing breakable about them, Brantford Asphalt Slates are easily and quickly handled and thus valuable time is saved in laying a roof with them. With labor scarce and high the saving of time is an important consideration.

For homes, churches, schools, golf clubs, public buildings, garages, barns, silos, or any buildings with pitch roofs, (note our illustrations), there is nothing more artistic, durable and economical than Brantford Asphalt Slates.

Write for interesting booklet.

Brantford Roofing Co. Limited

Head Office and Factory, Brantford, Canada
Branches at Toronto, Montreal, Halifax.

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show for it was some very dear bought experience. Not a man moved. Then one man in the back of the hall said, "tell the directors to go on and pay off the $250,000. The secretary said, "this is the greatest day in the history of agriculture," and the very next year they made one million dollars.

The Grain Growers came to our rescue and they did the same for us as they will do for you. They sent men to help us organize and we will send men to help you organize if necessary. We are trying to do a great deal in Ontario. Ontario is the graveyard of farmers organizations. We have the old brains there, however, and we have the result of their experience. We organized four years ago last March on the 19th or 20th. At present we have fifteen thousand members.

When we first organized we had many things to contend with. The bigger we got, the bigger our problems became, and we had politics to contend against, but we will have no more tory and grit gods now. We do not ride the goat and there is nothing secret about it. We pay fifty cents for membership. Farmers have said to me, what do I get for fifty cents, and I said to them, what do you expect for fifty cents. You get more than you deserve. Bootblacks pay their organization $5.00 apiece; telephone operators pay $11.00 and so on I think we will have to raise the fee to ($1.00) one dollar. Every year in Toronto we have a meeting. Any club that has upwards of twenty members is entitled to one delegate. If you had one hundred men you could send five delegates. We pay their railway fare, but if we did not pool the cost, we would not have any delegates. In New Brunswick you are near together and the railway fares would not be so great, should we go short the Toronto clubs make up the difference. Our railway fares cost us last year fourteen thousand dollars. The editor of the Toronto World said "the meeting was the greatest I ever saw" and wished all the other editors could have been there. It was an eye opener to him, because the man about town considers the farmer an inferior being, and I am sorry to say that the farmer has accepted this position. Out of the fifty cents we hire the hall, pay for the printing and advertising and the propaganda work is carried on for the benefit of the agricultural industry. We fought the price of grain from $1.90 to $2.20 per bushel. The Commissioner said to me, how many men have you got in Ontario. I said we have about 12,000. He said could you tell me the number of farmers in the Province of Ontario. I said about 200,000 or a little over. I saw in a moment that we did not represent a fringe of agricultural industry.

We sent a delegate to fight the Bell Telephone Co. They have municipal and independant lines and we want a free interchange. Our case was presented and practically admitted, but the war stopped it.

The railway companies have raised their freight and passenger rates. They asked the Government for more money. We telephoned to the manufacturers to help us but they wouldn't do this because increased freight to them meant increase in their goods and that meant that the farmers would have to pay a double price on their increase. We fought hard. Our lawyer was a good one and he fought. We got this increase set aside and it was put off from June until after the election. Then the Government said they would give us an issue and it was put off again from Jan. to March. We had to go down again and we were beaten and you are paying increased freight rates today. The original farmers who

(Continued on page 492)

Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Address

Mrs. M. Summers
BOX 309 WINDSOR, Ontario

CAR LOT POLICY

The following revised statement of the Car Lot Policy will become effective May 1st, 1918, and will replace all statements with regard to same previously issued.

Under this Policy the Dominion Live Stock Branch will pay reasonable travelling expenses of a farmer residing in Canada, or authorized agent of farmers residing in Canada, who purchases one or more car loads of breeding stock under conditions as hereinafter set forth:—

(1) Assistance under the Policy will be confined to purchases of female breeding stock (cattle, sheep or hogs) made at the Union Stock Yards, Toronto; Point St. Charles Stock Yards, Montreal; or the East End Stock Yards, Montreal.

(2) No assistance under this Policy will be allowed when the stock is purchased for speculative purposes.

(3) A car lot shipment must include not less than twenty head of cattle(forty sheep or forty hogs. In a mixed shipment, two sheep or two hogs will be accepted as equivalent to one head of cattle in fixing the minimum of one car.

(4) Any person desiring to take advantage of the Policy must make formal application to the Representative of the Branch at his nearest Stock Yards, and, before commencing to purchase, must receive from him a Certificate authorizing assistance under the Policy. This Certificate will indicate the Stock Yards at which the purchase must be made if the benefit of the Policy is allowed. In all cases, the Certificate will direct the purchaser to his nearest Stock Yards, unless, in the judgment of the Representative of the Branch, the condition of the Market at the time warrants an exception being allowed.

(5) Expenses will be allowed covering Railroad transportation from the home of the purchaser to the Stock Yard at which the purchase is made, also hotel expenses for a reasonable time required to make the purchase.

(6) The purchaser should secure a receipt for his hotel expenses and should attach this receipt to his account. The account should be forwarded in triplicate on forms which will be supplied for the purpose.

(7) The purchaser is further required when forwarding his account to include on forms supplied by the Branch a statement regarding the purchase. The Certificate secured from the Representative of the Branch previous to purchasing should also be attached to the account.

(8) Parties purchasing female breeding stock under the terms of the Car Lot Policy and who comply with the terms of the Free Freight Policy of the Branch will be entitled to the benefit of both Policies on one shipment.

(9) If desired by the purchaser, the services of the Representative of the Branch at the markt will be available in an advisory capacity. The actual purchasing must be done, however, by the buyer himself or by his authorized agent. Under no circumstances will any responsibility in this connection be assumed by any officer of the Branch.

The Markets Representatives of the Branch at the Different Stock Yards in Eastern Canada are as follows:—

W. H. Irvine, 1127 Keele St., Toronto, Ontario.

S. H. Chipman, Live Stock Exchange, Brdige St., Montreal, Quebec.

SHERWIN-WILLIAMS PAINTS & VARNISHES

Get the Varnish that is made to do what you want it to do.

MAR-NOT
For Floors

Made for floors—to be walked on and danced on, to have water spilled on it, and furniture dragged over it. *MAR-NOT* is tough, durable, absolutely waterproof. Dries in 8 hours; will rub and take a high wax finish; pale in color; particularly desirable for fine hardwood floors.

SCAR-NOT
For Furniture and Woodwork

has been the means of converting thousands of women to the idea of protection in the home. They use *SCAR-NOT* to make their furniture, etc., fresh and pleasing,—even boiling water will not affect it.

REXPAR
For Outside Work

Made to protect outside doors, boat decks, spars, store fronts, etc., against every kind of Canadian weather. It is absolutely waterproof and will not turn white, no matter how long exposed.

The Sherwin-Williams agent in your neighborhood has the right varnish for your purpose. Ask him.

Color schemes and suggestions for any part of your building furnished by expert decorator, free upon application and without any obligation.

Send for book—"The A. B. C. of Home Painting"—written by a practical painter, and telling how to paint, varnish stain or enamel every surface in and around the house. Mailed free anywhere.

THE SHERWIN-WILLIAMS CO., OF CANADA, LIMITED,
897, Centre St., Montreal, Que. 110 Sutherland Ave., Winnipeg, Man.
PAINT, VARNISH AND COLOR MAKERS. LINSEED OIL CRUSHERS.
6

BUYING NEGLECTED BEES TO INCREASE HONEY PRODUCTION

By F. W. L. Sladen, Apiarist, Dominion Experimental Farms, Ottawa

Patriotism is apt to take strange forms in these days of stress. One of the ways to carry out the motto "Food will win the War" may be to sell the bees to a neighbour.

Of all the suggestions that have been made for greater honey production this year, none, at this eleventh hour, promises to be more effective than the sale or lease of bees owned by those who have not time to attend to them or are inexperienced in modern methods of bee-keeping, to those who have gained this knowledge or are making an effort to do so, because the man who knows how, is likely to obtain several times more honey per colony than one who leaves the bees alone or employs old fashioned methods. The season is so short that any increase of bees by breeding that the beekeeper can make is largely at the expense of the honey crop; he must therefore buy bees in the spring to get an increased return within the year.

Because it takes about two years for a man to learn to become an expert beekeeper, and many own bees without being in a position to give them the attention they need to make them fully profitable, a quicker increase in honey production will in many cases be obtained by a change in ownership than by an attempt to inculcate better methods of management, valuable as this work always is. We do not know exactly how far it will be possible for beekeepers to increase their stock by the purchase of bees without combs from the South. An unfavourable sea-

EVERY TIME

you do a thing right and finish it, you are successful and every right action brings you nearer success on a larger scale. A training in business is the right thing. Write us.

Moncton Business College
Moncton, N. B.

It pays to attend an Accredited School.

GROW STRAWBERRIES

In the rush of other work, do not forget to set that new bed of strawberries this spring. Many growers are cutting down their acreage on account of labor difficulties and the high price of other crops. Production for the next few years will be cut in two and berry prices are sure to be high. Our advice to our fellow Fruit Growers is, grow all the grain you can, but DON'T GIVE UP THE STRAWBERRY. Among other varieties we recommend Senator Dunlap and Warfield at $4.00; Sample, Arnout, Buster and Glen Mary at $5.00; Wm. Belt, Dr. Burrell, and Bubach at $6.00 a thousand. The great everbearer, Progressive at $1.25 a hundred. Send a card for our free Catalogue.

CYRUS & MANNING ELLS, Port Williams, N. S.

son in the South, and a very heavy demand for such bees, with the entry of many inexperienced shippers into the business, caused more or less disappointment in a good many cases last spring. A further risk this spring is a possibility that a congestion of railway traffic may cause more death and delay in transit than usual. But any beekeeper can go around his neighbourhood in the spring and endeavour to buy up bees from those who have lost interest in them, incidently putting those who do not wish to sell on the track of how to care better for them, even if it is to do nothing more than to send their names to the Publications Branch of the Department of Agriculture at Ottawa for the supply of free literature on the care of bees.

While bees are now worth somewhat more than usual on account of the high price of honey, colonies in neglected condition will be found that are dear at $5.00 or even $3.00 each, others that are good value at $10.00. By buying in ones immediate neighbourhood and perhaps packing and transporting the bees oneself, the spreading of brood diseases to new districts and the less of bees in transit, as well as high transportation charges, will be avoided.

MANURE

Application of Manures.—On a majority of farms, most of the manure that is available for application to crops is made during the winter months when the animals are stabled. No advice regarding the best time to apply manures can be given that is applicable to all conditions. In general, the sooner manure can be spread upon the land after it is made, the more will the soil be benefitted. There is also a greater tonnage of manure when first made than at any other time. If piled for any length of time in the field, the weight will appreciably decrease.

Special conditions, of course, demand special treatment. Where market gardening is being practised, it is best to have the manure rotted, as quicker results are obtained in the growing crop. Young clover seeding can often be strengthened by a light top dressing early in the fall, which helps the young plants to get a stronger root hold and enables them to stand the winter better. This is particularly true with regard to the tops of knolls, or thin spots in the seeding.

Rate of Applying Manure.—Manures are often applied too freely. Rarely is it profitable to apply heavily on a small portion of the farm each year to the neglect of the balance of the farm. It is much better for the land to receive frequent and light dressings than heavy dressings at longer intervals. If 100 tons of manure are available to be used on a ten-acre field of corn, it would be better to apply the manure at the rate of ten tons to the acre over the whole field than to apply twenty tons to the acre on half of the field and allow the other half to go unmanured. Regardless of how manure is applied there is a certain amount of loss caused by leaching in the soil. The sooner the fertilizing elements of manure can be recovered by the crop being grown on the land, the less loss there will be. It stands to reason that, if all the corn plants on the ten acres reach out to recover the manure applied, there will be less loss than if the plants on only five acres are working for its recovery.

How to Apply Manure.—There are many farmers who do not make use of manure spreaders when it would be profitable for them to do so. On the other hand, farmers who do not have a large amount of manure to draw out and who make a practice of drawing it in the winter may profitably get along iwthout a manure spreader. It will scarcely pay to have a manure spreader on the farm unless the bulk of the manure is to be drawn out at a time when the spreader can be used.

Liming the Soil.—Lime is an important factor in maintaining the fertility of certain soils. If the soil contained no lime, plants upon it would not thrive. Most soils contain enough lime for the needs of the crop, although occasionally it becomes exhausted in some soils. Lime is, therefore, not usually applied as a direct fertilizer. When applied to sandy soil, it has a tendency to make it more retentive of moisture, and, when applied to clay, it has the opposite, effect making the soil more crumbly. Lime sometimes liberates the plant food, making it more soluble and thus available for the use of the plant.

Its important function, however, in modern agriculture is to sweeten sour soils. Such soils, even though rich in plant food, usually produce poor crops. If the acid in the soil can be neutralized by the addition of lime, better crops are likely to be produced. Soils are often acid where such a condition would be little expected. A simple method of determining acidity in soils is to test it with blue litmus paper. This can be purchased at almost any drug store. Take several samples of soil from different parts of the field, mix them into a paste with water, and insert one end of the litmus. Leave it for an hour and if the blue paper is turned red where it comes in contact with the paste, the soil is likely sour. Soils which do not show marked acidity sometimes need lime. The best way for a farmer to determine this is to apply lime on a strip of his field and compare the results of the crop on this treated strip with those on the untreated portion of the field.

Lime may be applied at about one ton per acre, either late in the fall or early in the spring. If air slaked lime is used, it should be placed on the land in small heaps and covered with moist soil for a few days until it has become finely powdered. It may then be spread when there is no wind.

Clover as a Manure.—Red clover and green crops are sometimes used as green manure, to be ploughed und-

The Ford Saves the Hay and Oats the Horses Eat

IT HAS been estimated that five acres of land are required to maintain one horse for a year, and that the same five acres would produce nearly enough food for two people. If 50,000 Canadian farmers each replaced one horse with a Ford, 250,000 acres would be added to the Nation's source of food supply and enough extra food made available to feed 100,000 people.

Just think what a great service this means to the country at the present time and the benefit to the farmers from the sale of food produced on this acreage.

A Ford car also saves the farmer a week or more of valuable time each year, which can be used for further productive work. The Ford travels three times as fast as a horse and rig—costs less to run and keep, and is far easier to take care of. With labor so scarce and high priced, time means money, so do not delay in getting your Ford.

Ford

RUNABOUT $575
TOURING $595
COUPE $770
SEDAN $970
CHASSIS $535
ONE-TON TRUCK.$750

F. O. B. FORD, ONT.

Ford Motor Company of Canada, Limited,
Ford, Ontario

er, if the land is poor in humus. Even where clover it cut for hay and only the roots and the stubble turned under, it has a marked influence in increasing the yield of succeeding crops. By means of the nitrogen fixing organism on its roots, it is able to gather nitrogen from the air and leave it in the soil in a form which can be readily utilized by growing crops. It frequently happens that decided increases in yield have been obtained from ploughing under a crop of clover. It should be emphasized, however, that the mere introduction of red clover into the farm rotation is not in itself a sufficient procedure to maintain indefinitely the productivity of the soil. The clover adds only the nitrates to the soil and removes large quantities of potash, phosphorus and lime, especially if cut for hay and the manure made from it is not returned to the soil. To get full value from clover in the rotation, the manure produced from the feeding of it should be returned to the land.

THE UNITED FARMERS OF N. B. HOLD MONSTER CONVENTION

(Continued from page 489)

put their fifty cents in the Treasury, received the benefit of the putting off of freight rates for a year.

When the United Farmers President and two other men and myself went to Ottawa to fight the increased freight rates, we had our breakfast at a cheap restaurant, while the members representing the railways, went to the Chateau Laurier. We had to sneak around the corner to save the money that belonged to the United Farmers, while the parasites went to the best hotel in the country. We are a cowardly people, if you were not farmers I would not say it, but we have not done our duty, we can do it by standing shoulder to shoulder and standing on our dignity. I am going to say there is something wrong when the Food Controller of this country says our wives can feed the hogs. I am quite sure I think as much of my wife as the food controller thinks of his.

You will meet with all kinds of opposition. You will meet with men who tell you you should not spend your money except locally. I wanted a plough and my dealer had one for $15.00. I saw one in town for $12, but my dealer says you should buy things at home. If I send $12. away for the plough I have $3. in my pocket, but if I give him the $15. and he sends away $12. for the very same plough, then he has $3. in his pocket.

When we first started people seemed to think our organization a joke, but they don't think so now, and we met with all kinds of opposition. In one instance, we bought our binder twine from the Belfast rope works, then three years ago we could not buy any more there and the Ontario people would not sell us a bit. We have done a business amounting to one million dollars. We have not made a great amount of money but that is not what we are for, we are there to benefit the farmers.

You must do business by capacity, that is the only way you can do it. Do not start on two small a scale, you are making the same mistake we did. Some time ago we had forty car loads of seeds on our hands and the farmers would not buy it from us. We wanted to sell it to the farmers, and so save them the extra expense. Of course the time came when we could not keep this seed on our hands any longer, so we had to sell it to the dealers—and the dealers sold it to the farmers.

The delegates at the convention elected the following officers; President—C. L. Smith, Woodstock; 1st Vice President—T. W. Caldwell, Florenceville; 2nd Vice President—A. Chapman, Pinder; Executive—Judson Corey, Kincardine; John Fulton, Wicklow; A. A. H. Margison, Centreville; Chas. R. Enman, Killowen and John Young, Glasgow. Auditor—Rennie Tracey, Centreville.

An evening meeting was held at the Fisher Memorial School at which the speakers were Messrs. Morrison and J. D. McKenna of the Maritime Farmer, Prof. Kierstead on behalf of the Food Controller and Mr. Balmain on behalf of the Y. M. C. A. Triangle Fund.

The following resolutions were unanimously adopted:—

1. Resolved that whereas under the present method of breaking winter roads, it often works out that in settlements where a large proportion of the ratepayers work in the lumber woods in winter, the breaking of the winter roads has to be done by the few without remuneration. Be it further resolved that the Provincial Public Works Department be requested to pay for the breaking open and snow plowing of all winter roads.

2.. Resolved that the United Farmers of New Brunswick at their annual meeting respectively call the attention of the Food Control Branch at Ottawa to the constant violation in all parts of New Brunswick of the law fixing the prices at which mill feeds must be sold, and demand that all dealers in Mill Feeds be licensed and compelled to sell at lawful prices. Subject to cancellation of said license for charging excess prices. .

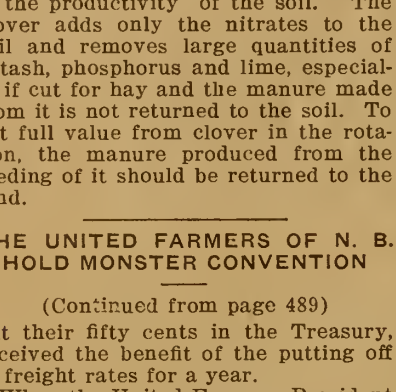
3. We, the United Farmers of New Brunswick wish to put ourselves on record as being heartily in accord with the movement for greater production in Canada the coming summer, but feel that the so-called daylight saving act will hinder, rather than promote the interest of Greater Production.

4. Whereas fully seventy-five per cent of the freight carried by the Railways of Canada are farm products and whereas the Railway Commission at present has no Agricultural representative, therefore resolved that this convention of U. F. N. B. recommend at the earliest opportunity the appointment of two experienced farmers on the Commission.

5. Whereas the Agricultural interests have not been represented by practical farmers in the Parliament of Canada to the extent of a proportionate representation and whereas the basic industry of Canada has not received that consideration it demands. Therefore resolved that this convention of U. F. N. B. nominate experienced farmers in every rural constituency in N. B. in future elections.

6. Whereas the live stock industry lies at the foundation of Agricultural progress and demands greater consideration, and whereas the shipment of live stock a distance of 400 miles to Montreal exacts a heavy toll in shipment. Therefore resolved that this convention of the United Farmers of New Brunswick recommend that at the earliest possible time an abbatoir be erected at St. John.

A further session was held on Wednesday morning the 24th inst., at which Mr. C. L. Smith of Woodstock was appointed as organizer for New Brunswick.



Conserve Your Health

CANADA needs her men in field and factory.

No one can afford to be too sick to work. Kidney trouble often keeps men ailing around the house, but

Dr. Wilson's HERBINE BITTERS

will quickly relieve pain in the back, take away the burning in bladder, restore healthy action to the kidneys, and make a tired, worn-out, pain-plagued man feel as if he had been born anew.

Dr. Wilson's Herbine Bitters are made from simple herbs and are Nature's own remedy for Kidney troubles, indigestion, constipation, bilious headaches, general rundown condition.

At most stores. 25c. a bottle; Family size, five times as large, $1.

The Brayley Drug Company, Limited
St. John, N.B. 32

EWING'S SEEDS

will grow this year, just as they have grown for the past 45 years.

Ewing's Seeds bring success to the amateur gardener, and excellent profits to those who make their livings from their crops.

Write for our illustrated Catalogue — and if your dealer hasn't Ewing's Seeds, order from us direct.

THE WILLIAM EWING CO. Limited
Seed Merchants
McGill Street, Montreal. 58

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Union-Made
Overalls
Shirts & Gloves

Bob Long says:

"My overalls and shirts are the best made, because—they are roomy and comfortable. I designed them with the idea that you might want to stretch your arms and legs occasionally."

Insist on "Bob Long" brand. Ask your dealer for Big 11—the big grey overalls—the cloth with the test.

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Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on. as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE—One Holstein Heifer Calf, 3 months old; one Holstein Bull, one year old. —ARTHUR E. FERGUSON, West Bathurst, N. B.

FOR SALE—Young Berkshire Pigs, six weeks old May 15th, will register. Price $10.00.—J. I. STEWART, Amherst Pt.

FOR SALE—Registered Yorkshire young pigs, mother raised on College Farm, Truro, $8.00 each.—G. K. COLDWELL, Wallbrook, Kings Co., N. S.

WANTED—MARRIED COUPLE to go on farm outside of Boston. Man to work on farm, and woman to do the cooking. Apply to R. CORRITTE, P. O. Box 968, St. John, N. B.

FOR SALE—Registered Ayrshire bull, No. 18032. Dam 31884 C.R.R. Also several registered bull calves.—E. CHADDECOTT, Monkham's Farm, West Merigornish, Pictou Co., N. S.

EGGS FOR HATCHING from choice stock, Houdans, White Wyandottes and Rose Comb Brown Leghorns. Eggs $1.50 per setting. C. C. Sweeny, Lunenburg, N. B. Box 413.

LADIES WANTED—TO DO PLAIN and light sewing at home; whoel or spare time; good pay; work sent any distance. Charges paid. Send stamp for particulars. National Manufacturing Company, Montreal.

HOLSTEINS FOR SALE—Five pure bred and several grade cows and heifers to freshen in April, May and June, also two pure bred bulls, one year old.—JOS. R. TAYLOR, Upper Dorchester, N. B.

I NEED ONE LADY OR GENTLEMEN in your vicinity to do a little special work. Good pay to the right person. Enclose stamped envelope for reply.—L. M. VINCENT, P. O. Box 617, St. John, N. B.

Percheron Stallion

Two-year-old stallion, pure bred and registered. A fine big boned promising young fellow. Sired by H. C. Jewett's "Gresham," who was never beaten as show animal in the Maritime Provinces.

ALBERT FLEMMING,

Truro, - - - N. S.

FOR SALE

Pure bred registered Percheron stallion, rising five years old. He is a first-class individual, a sure stock getter and will stand inspection anywhere. A bargain if taken at once.

A. S. HINGLEY,

Prince Str. House, Truro, N. S.

CLYDESDALE STALLIONS FOR SALE

I will sell either Baron's Own (Imp) No. 15282 seven years old, by Baron's Pride or Kelvin's Pride No. 16262, four years by Baron Kelvin. Baron's Own has been several times Champion at the leading Provincial Shows. Kelvin's Pride has also been a Champion. Apply to James Easton.

R. A. SNOWBALL, Prop.

Meadowbrook Stock Farm,

CHATHAM, - - - N. B.

URGENCY MEETING N. B. FARMERS ASSOCIATION, FREDERICTON, APRIL 26th.

(Continued from page 465)

es; to-day he has only one boy at home. He is a man with heart failure and liable to die at any time, he has from 12 to 15 cows, and what condition would that man be in if that boy were taken?

I have two boys in the trenches and have only one left. I believe we should do all we possibly can, even supposing they do take those boys. The Military Service Act is a good fair Act, but no doubt it was abused in some cases. There are two or three boys in our section who did not go, they had some pull and didn't have to go, but that is no fault of the Act at all.

It was moved and seconded that the following Resolutions, introduced by the Resolution Committee, be taken up, section by section, and discussed—

1. WHEREAS a proclamation has been issued by the Dominion Government, calling to the colors all young men of 20, 21 and 22 years, inclusive, and annulling all exemptions affecting farm labor.

Mr. Porter.

There should be some kind of a guarantee that the labor will be left on the farms. Boards were appointed, at a considerable expense, and the boys on farms exempted, now that order-in-council has been cancelled. The result will be, instead of increased production, reduced production. We do not wish to come out in opposition to the government, we feel patriotic in this cause. The war to-day requires the assistance of all civilized nations. The most efficient war correspondents claim that food will be a vital question and it may decide the result of the war. The Allied Powers have asked Canada for what? They have asked for food and munitions,—they have never asked for a man,—Canada has always volunteered and suffered and died and paid all the debt that can be paid. We have not been behind. For the small number of people that we have Canada has done well. Canada is noted the world over for what she has done. Yet the food production question come in, the Allies say they want food and if they have got to look to Canada and the U. S. for it, it is our part to get it. They can get food from Canada, when they cannot get it from Australia and other far off countries, and we as farmers have undertaken to produce that and for that reason have had our sons and laborers exempted, according to the provisions of the Act, and we have been building on that. Now the whole thing is struck out, and where will we be? I think it is our duty to-day to express our opinions plainly and emphatically on these points, so that the Government may understand what we require and what we think.

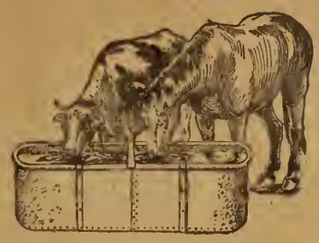
A young man in New Brunswick, a young man in Canada, a young man most anywhere is worth more to-day in deciding this war in favor of the Allies on the farm than anywhere else. If he is drafted now it will be a year before he can do anything overseas in the trenches. If we have not the help now, we simply cannot raise the food. I think it is vital that all laborers should be retained on the farms.

Mr. A. C. Fawcett.

Something seems to have gone wrong with the M. S. A. The Country was led to believe the farmers would be exempted,—I don't know what is wrong. This thing was apparently working along all right, now they come to the conclusion that the Act is no good. Whether that is the real reason or whether the manufacturers have more influence than the farmers, it is hard to know. They state there are men loafing around pool rooms and on street corners, still it is proposed to take away the farmers and have these men conscripted and put in the farmers' places. If these men are able-bodied and doing no particular work in Canada, why are the farmers taken away and these other young men put in their places?

"EASTLAKE" TANKS "EASTLAKE"

THE BEST MADE ANYWHERE



The Heavy Galvanized Tubing is locked on.
The Angle Iron Braces are formed around the Tubing.
Side Seams have double row of rivets.
Bottom is turned up inside—the strongest method known.

Our Tanks are RIGHT in EVERY RIVET

You can get any kind of tank in any size from us including HOUSE TANKS HOG TROUGHS—GASOLENE TANKS—WAGON TANKS.

Write for Free illustrated leaflets, showing prices and full description.

The METALLIC ROOFING CO., Limited

T2E 1194 King Street W., - TORONTO

I think everyone knows the farmers are useful. It would take two of these men to do the work of one farmer. They all want the same pay and with the very limited crops, the high prices and unskilled people from cities on farms, it will mean the whole proposition will fall down and it will be an absolute failure in every particular, as the food will not and cannot be produced.

Section 2. WHEREAS the urgency of the food situation is such that every man in Canada is asked to produce certain staple food crops and cultivate five acres more than usual during the season 1918, that our Empire and her

(Continued on page 496)

THE STOVE WITH 3,000,000 FRIENDS

3,000,000 housewives have discovered the way to better cooking, cooler kitchens and less work. They use the New Perfection Oil Cook Stove.

Ask *your* neighbor. She knows the New Perfection Oil Cook Stove is dependable and easy to operate. She knows the Long Blue Chimney gives a clean, intense heat—without odor, or smoke. She knows the convenience and economy of using oil for fuel.

The New Perfection Oven bakes unusually well —makes the stove a complete cooking device.

The Cabinet adds to the appearance of the stove and provides extra room for utensils.

Royalite Coal Oil gives best results.

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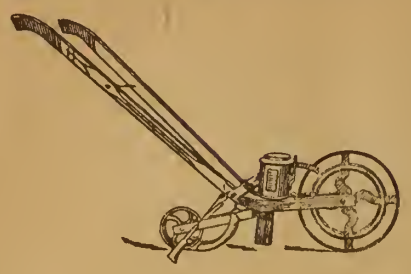
NEW PERFECTION OIL COOK STOVE

GARDEN SEEDERS!



A DANDY FOR TURNIPS

Makes the drill, sows, covers and rolls the seed while you walk. Does the work of two men in half the time. No better seeder built for the accurate sowing of turnip, carrot, cabbage, beet, pea, corn and all other kinds of garden seeds.

Price $10.50 Delivered at Your Station. Order Today.

The Sussex Mfg. Co., Limited,
Sussex, N. B.

FARM HELP AVAILABLE

25000 Older Canadian Boys Have Volunteered TO HELP THE FARMERS

Last year 7,000 Older Boys demonstrated to the farmers of Canada that they could help take the place of the regular farm help that has gone overseas.

They proved their willingness and ability to adapt themselves to farm work.

This year many farmers are asking for boys.

Already 25,000 boys between 15 and 19 years of age in Ontario and western Canada have offered their services as SOLDIERS OF THE SOIL. The enrollment week for New Brunswick takes place April 28th to May 4th. The plan is to have the boys fill in the enrollment forms which will be turned over to the Department of Agriculture.

The farmers are asked to write to the Minister of Agriculture stating what help they require and for what period.

Arrangements as to wages will be agreed upon by the farmer and the boy.

J. F. TWEEDDALE,
Minister for Agriculture.
Fredericton, N. B.

AGRICULTURAL RELIEF OF THE ALLIES

In February circulars and small envelopes were distributed throughout the province with a request that consideration be given to the farmers in Belgium, France and Serbia who have lost everything because they lived where the battles have been and are fought. The fund is to assist these men to re-establish when the war is over.

Dr. James W. Robertson of Ottawa, is in charge of the work in Canada and at his resuest the Provincial Department of Agriculture is urging that New Brunswick maintain her position among the provinces in Canada. This is only preparatory in order to prevent very heavy calls coming at the close of the war.

"The farming population of the British Empire who have not suffered are being invited to help their unfortunate brethren in allied countries who have lost everything in the common cause. They need seeds, live stock, agricultural machinery and tools to enable them to resume farming operations.

"Donations have been made of much needed agricultural implements and tools. The Germans in their retreat during the battle of the Marne gathered field implements in heaps and put bombs under them. They burned farmhouses wantonly as a deliberate part of their policy to leave the war area utterly desolate.

"Recently the Overseas Dominions have been invited to join in the work of relief. Thus the farmers of the whole British Empire will be able to render friendly and much needed help to the stricken farmers in the regions which have been devasted by the enemy. When the occupied territories of France, Belgium and Serbia have been cleared of the invaders the task of reconstructing will be too great for the peasants, who have lost everything except the land itself.

"We ought to help our stricken brethren as soon as the enemy is pushed out of their territories. We want to do that for several reasons. The object is humane and we are a humane people. They are our allies, our neighbors and our friends. We want to help them for the sake of the good name of Canada. It would be a good thing in our international relations, to have it known that the dairymen of Canada gave something a good thing to have it known that the grain growers gafe something, a good thing to have it known that the livestock men gave something, that our poultrymen and fruit growers have given something, and above all that onr country women have remembered their sistérs whose farm homes have to be re-established out of ruins. We want for Canada a place among the nations, on behalf of our farmers which will be in keeping with what our sons and brothers have done and won on the fields of battle."

Up-to-date less than $1,000.00 has been received by the Treasurer of the Fund, W. R. Reek, Fredericton. Agricultural Societies, if they have not already done so, would do well to consider this as organized bodies. Many perhaps did not receive envelopes but contributions will be welcome in any form.

Complete lists of subscription will be published shortly.

THE FARM WELL

Good water is as essntial as good food for the maintenance of health in the family and the thrift of the farm live stock. An ample supply of pure, wholesome water is not only a blessing of inestimable value, but one of the most valuable assets a farm can possess. There is no countiry in the world with a greater abundance of pure water in lakes, rivers and springs than Canada and there is no insuperable difficulty in the larger number of our agricultural districts in obtaining a supply ample and pure.

A glance through the Annual Reports of the Experimental Farms shows that the Division of Chemistry is doing a valuable work towards the improvement of the farm water supplies throughout the Dominion. In the course of the past thirty years many hundreds of samples from farm wells have been analysed and reported on. A perusal of these reports shows that year in and year out only about one third of the waters are pronounced as pure and wholesome, in other words, were free from excretal drainage matter. This is not as it should be and the reason is not hard to find. In too many instances convenience only has been considered in locating the well. For the most part we find these polluted wells under stables, in barn yards or dangerously near the privy or where the slops from the farm house are thrown out. Wells in such locations can never be depended on to yield pure water. They must sooner or later become polluted by filth draining into them from the surrounding soil, which inevitably becomes saturated with manurial products. These wells indeed act as cess pits and the records show not a few instances in

SANITONE
for the WALLS and CEILINGS

There are three features of "SANITONE" that appeal very strongly to the average woman.

1st.—She can Paint the walls herself; or have the home re-decorated with "SANITONE" by the local painter, at the minimum cost for labor.

2nd.—"SANITONE" walls are always fresh and clean, because the surface is washable; does not fade out or rub off.

3rd.—The many soft, rich tints—blending with any color scheme desired—enable the average woman to make her home refined and thoroughly artistic at very small cost.

For Furniture and Floors use C. P. SUN VARNISH STAINS, and where a high-gloss finish is desired, for inside use on wood-work, etc., use CANADA PAINT.

And we'll send you one of the most complete books ever written on the subject of Paints and Painting—"What, When and How To Paint", free on request.

DECORATIVE SERVICE FREE. Send for color schemes and suggestions for finishing any part of the exterior or interior of your building.

THE CANADA PAINT CO. LIMITED,
Makers of the famous "ELEPHANT BRAND" White Lead.
572 William Street, Montreal. 112 Sutherland Ave., Winnipeg.
6

PEERLESS PERFECTION

No matter how fast it comes, the most unruly animal can't break through a *Peerless Perfection Farm Fence*—it springs back into shape.

Made of heavy Open Hearth steel galvanized wire with all the impurities taken out and all the strength and toughness left in. Every wire is crimped making the fence into one continuous spring. Top and bottom wires are extra heavy. Will not sag. Requires less posts than ordinary fence. Absolutely guaranteed.

Don't buy a rod of fencing until you get our illustrated Catalog. Describes our big line of farm, poultry and ornamental fencing. Also Peerless farm gates.

Agencies almost everywhere. Agents wanted in all unassigned territory.

The Banwell-Hoxie Wire Fence Company, Ltd.,
Winnipeg, Man. Hamilton, Ont.

which the water of such wells possessed a distinct fertilizing value from the presence of excretal matter.

The lesson from these facts is: don't sacrifice health to convenience, locate the well at a safe distance—50 to 100 yards at least—from any possible source of contamination. A bored or drilled well tapping a deep seated source, tightly sealed off at the junction of the soil and rock, is likely to give the purest supply. If a dug well, line it to a depth of 10 or 12 feet with concrete or puddled clay, 4 to 6 inches in thickness, to ensure the exclusion of water from the surface layers of soil. Keep the surroundings of the well absolutely clear from the accumulation of filth and preferably in the grass. Make provision to carry off the waste water from the pump, so that it may not re-enter the well and so protect the mouth of the well that surface water cannot flow in and mice, frogs, snakes, etc., are excluded. With wells such as these pure water may be secured. A wind-mill, gasolene engine or hand force pump will be found a paying investment, enabling the water to be piped to the house, stable and barn, thus securing running water in the farm buildings—a convenience and blessing that needs only to be experienced to be appreciated.

SHEEP BREEDDERS HAVE MANY WORRIES

Lucrative as the sheep industry may seem at the present time, I will venture to say that many flocks will not pay the ir shepherd a good profit. I have observed many times when neighbors met in the spring of the year, about the time they were getting their rewards for the care and attention they had rendered their pregnant ewes during the winter months, the question would arise in their conversation: "What fer luck yea havin' with lambs?" "Oh, bad luck, John I don't know what's the matter with my sheep. The lambs are so weak, they won't suck, and some of the ewes hain't got any milk and so far I've lost about two-thirds of the labms."

To this man sheep are not proltable and unless he is willing to conform himself to the care and management of the flock that will avoid such trou ble he had better dispose of his sheep. Many men are ogod feeders and care well for their stock, keeping a few sheep as a side line, with the idea that these animals require little or no attention, and because of a fleece on their backs they are expected to with stand all the cold rains and storms. To the writer it's a horrible scene to see a flock of sheep out in the open field, without any protection whatever, during a cold and freezing rain, or a severe snow storm. Men who would walk miles to save or gain a dollar often lose many dollars, because bringing their sheep to the barn, before they are in the habit of stabling their stock regular for winter feeding, would be too much trouble.

The writer admired sheep and started a flock when a boy about twenty-four years ago. In these years he has had both encouraging and discouraging experiences. We have possibly given more attention to sheep in these years than other live stock and in a measure have been successful. We do not pretend to know all about sheep now, but as we look back over the time of our experience we think of the many mistakes we made, the important things about caring for the flock we did not know, the many difficulties that arose, and why? There were in ternal an external parasites to figth and we had to learn how to prevent infection of these pests to keep the flock in a thrifty condition, and there are many other ills to which sheep are susceptible which we had to learn to diagnose. We had read how to do those things but sustained many losses that are now avoided because of some knoweldge gained by experience.

We always aimed to feed our breeding ewes sufficiently and perhaps overdid it sometimes. But an importani factor was at first neglected. In the winter months ewes were mostly confined to a lot adjoining their place of shelter or stable where they were fed. They had ample room to exercise if they cared to, but sheep will not walk around or away from the feeding place very much unless they are compelled to do so in search of food. Later we found it a little more trouble but by all means very profitable to hitch a horse to a sled and haul their morning feed to the field some distance from the barn. The sheep will follow the sled and the farther we can make them tramp the better they like it. They are always back to the barn for their evening feed of alfalfa and a little oat, and what appetites, and how they do relish the alfalfa.

An essential study which became very interesting was to learn something of the correct type of our breed, to be able to somewehre near judge the value of the breeding stock we purchased, as well as be sensible in pricing our stock for sale. And the object is not alone how many lambs we cna raise, but also how good and near the standard of perfection we can have them.—S. D. K. in O. N. J.

The most common cause of sheep losing their wool is a let down in the degree of condition or thrift of the sheep. If sheep have come into winter quarters in fairly good thrift, and the feed is of such a character that they will decrease to quite an extent in their degree of condition and thrift this will cause the wool to come off in spots, or even over a large area of the body. The combination of feed used is the biggest factor in sheep losing their wool. It is true of course that sheep will rub off some of their wool when they are very ticky or lousy. The loss of big spots of wool, however, is due to a weakening of the wool fibres. This has been brought on by a poorly nourished body.

Keeping sheep in too close and warm quarters during winter is another cause for wool falling off in spring months.

FRUIT PACKAGES

The fruit season is again drawing near, how about your boxes and crates for the coming season To pack and ship to the best markets, you require the best standard packages, which can be had by placing yopr orders early with the

Hantsport Fruit Basket Co'y.

HANTSPORT, N. S.

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309
Windsor, Ont.

URGENCY MEETING OF N. B. FARMERS ASSOCIATION

(Continued from page 493)

about 50%.

Section 5. WHEREAS labor drawn from the cities cannot replace that taken from farms, particularly in the Province of New Brunswick.

Section 6. AND WHEREAS under the persuasive influence of representatives of the Dominion Food Control organization, vast preparation has been made by the farmers of New Brunswick along lines of greater production, thousands of dollars have already been invested in fertilizer, grain and preparatory work, which will to a great extent be a waste of enery and money, if the farmer has to submit to the severe handicap consequent on the enforcement of any order or act of Parliament affecting farm labor.

Mr. Fawcett.

In regard to the farmers being disloyal or not being prepared to do their duty in this important work,—it is not a case if we want to do the work,—but we can't do it. If they take away our efficient farm boys out of the country and help us out with conscripted boys from the town, they will fix it so that it will never pay. It is very hard to run a farm with a profit, when you have to hire help; it is very easy for a man with his boys and girls to make the farm pay. With hired help, inside and outside, a man cannot pay the interest on the capital.

Allies may be fed, and

Section 3. WHEREAS our farmers are prepared to faithfully fulfill their obligations and duties as British subjects in this respect, and

Section 4. WHEREAS in order to accomplish the desired results, efficient farm labor is necessary. (I do not think any are in favor of this section, so it is withdrawn).

Mr. Ashley George.

In Carleton County I have been around doing some organizing. The farmers are taken as kickers or as knockers, but I find throughout the Counties of York, Carleton and Victoria the farmers are really seriously concerned about the food situation; they are anxious that every acre should be sown and that everything should be done that could be done to increase production.

Prof. Robertson told us in Woodstock that unless there was 50% of an increase in production this year, it might be that they would have to stop the war on account of food. In consequence of these, and many other remarks the farmers are seriously concerned. We are not opposing the Empire, but we are so vitally concerned about the things of the Empire, and that is the reason we are here to-day.

A. H. Mersereau, Esq.

I attended a meeting of Prof. Robertson's and he said we were facing starvation, unless greater production was undertaken. The last few days there has been a great damper put on the work throughout our section. The boys going means that the farmers are going to cut down their production. Several farmers told me they would not employ outside help. If the past Government made a mistake in putting four divisions in the field, I do not think we should stand up and allow the boys to go starving to keep the divisions up to strength. I am simply stating that we have too many divisions at the front for a farming country. I think they should now let the States put their two or three millions in and we should be left to produce the food. The farmers in our section say they will do what they can themselves, which will mean a reduction of

C. L. Smith, Esq.

As you have already heard this afternoon, the Food Control Commission has got our men to go into farming on a more extensive scale—to buy fertilizer, to produce greatly increased crops—and now they are going to take our help away from us. Not only that, but they are going to save daylight for us. I want to say right here, I am a friend of Mr. Carvell's, I am a supporter of his, but I tell you he never gets up before 8 or 9 o'clock. You go to his office at 6 o'clock in the afternoon and he is never there,—but he says, "Let the farmers get up an hour earlier in the morning." Now, gentlemen, we are going to stand together like the paper men stood together, and like the farmers of Alberta and Saskatchewan stood together. Why, the Government fixed the price of wheat at $1.90 and the farmers of Alberta and Saskatchewan said, "You didn't fix the price of shells and munitions going over to Europe, one man made $700,000. excess profit, over and above a fair profit for making shells. You have got to guarantee the same prices for wheat as in the United States, $2.20." The farmers won there, because they were organized, and because they stood together, and the Government in Ottawa were afraid of the farmers.

How many farmers are on these various commissions? How many farmers are travelling over the country, getting good salaries for telling the farmers what to do, (and who are as well qualified to tell the farmers what to do as the farmers themselves)?

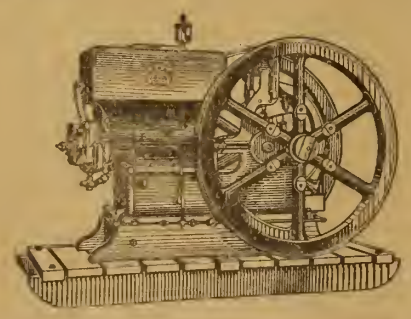
Again, the Railway Commission,—is there a farmer on it? The C. P. R. and the Canadian Northern and G. T. P. asked for increased freight rates. The farmers in the West got after the government and the Government was afraid. What did they do? They held it up and considered it and they passed a law that the railways would have to pay an excess over the earnings. The first meeting we had the Food Control informed us if the price of potatoes went above a certain figure, they would fix the price so that potatoes wouldn't go any higher. If the Maritime Province farmers weer organized, you could compel them to fix a price on potatoes, the same as the farmers accomplished in the West on the price of wheat.

Brantford Gasoline and Kerosene Engines

Stationary or Mounted

An Engine for Every Need

Kerosene Traction Engines



We Manufacture Complete lines of

Wind Mills, Grain Grinders, Wood Sawing Outfits, Pumps, Tanks, Water Boxes, Concave Mixers, Power Spraying Outfits, etc.

Agents Wanted in Unrepresented Territory

GOOLD, SHAPELY & MUIR CO., LTD., BRANTFORD, ONT.

A. McCAUSLAND, Victoria Hotel, St. John, N. B., Maritime Representative.

Notice to Stallion Owners

Notice is hereby given to stallion owners that they must submit their stallions for inspection at the nearest inspection point named below:—The following are the inspection points and dates of inspection:

CARLETON COUNTY			
Woodstock	May	7th 9	Gallagher Stable
Hartland	"	8	Clark's Hotel
Lakeville	"	9	Morse's Hotel
Centreville	"	10	Burtt's Hotel
E. Florenceville	"	11	Hotel
Bath	"	13	Giberson's Hotel
VICTORIA COUNTY			
Perth	"	14	Dionne's Hotel
Grand Falls	"	15	Curless Hotel
Plaster Rock	"	16	Queen Hotel
YORK COUNTY			
Fredericton (2 p.m.)	"	6 & 7	City Hotel
Millville	"	7	Hotel
Canterbury 9	"	8	Hotel
Stanley	"	9	Hotel
KINGS COUNTY			
Sussex	"	6	VanWart Stable
Norton	"	7	Loughery's Stable
Hampton	"	8	Hotel
QUEENS COUNTY			
Gagetown	"	10	Belyea's Stable
Chipman	"	11	Stable
SUNBURY COUNTY			
Fredericton Junction	"	15	Hotel
Oromocto	"	14	Kelly's Hotel
CHARLOTTE COUNTY			
St. Stephen	"	7	Vail's Stable
St. George	"	8	Hotel
ST. JOHN COUNTY			
St. John	"	7 & 8	Hogan's Stable
NORTHUMBERLAND COUNTY			
Doaktown	"	13	Hotel
Chatham	"	14	Touraine oHtel
Newcastle	"	15	Miramichi Hotel

J. F. TWEEDDALE,
Minister of Agriculture.

New Brunswick Dept. of Agriculture,
FREDERICTON, N. B.

May 2, 1918.

FOR SALE!

We have for sale a breedy, growthy bunch of young Shorthorn bulls, different ages, most of them are bred very strongly along milking lines, yet they would be a credit to any beef herd.
would be a credit to any beef herd.

We are booking orders for spring delivery of our large English Berkshire young pigs. Not the short chubby type, but the lengthy, growthy and large.

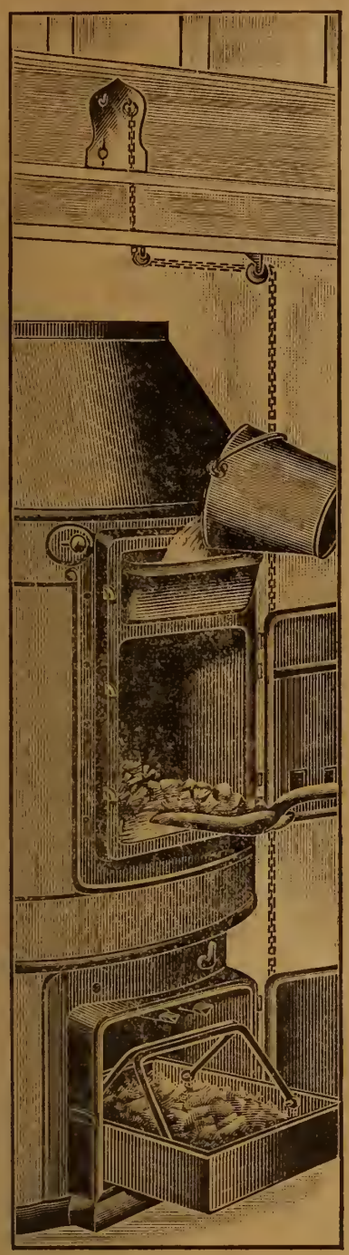
L. M. ANDERSON, Sackville, N. B.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.



Furnace Management
Ease of the Sunshine

Feeding the furnace;
—shaking down the ashes,
—removing the ashes,
—keeping the health-giving water pan filled,
—fixing the drafts for the night,
of the temper and destruction of your raiment any one of them may be.
—those are the five major operations in managing a furnace—and what a trial

If your furnace is the famous McClary Sunshine, these operations will cause you little more trouble or effort than winding up the clock.

The feed door of the Sunshine is big—you don't hit the side and damage your shovel and temper and scatter coal and naughty words all over the basement.

You don't shake the Sunshine grates, you merely rock them a few times,

—and the ashes drop from the perpendicular fire-box walls and grates and are guided into the big ash pan,

—and you lift the ash pan out with handles that are always cool.

—No shovelling of ashes—no ashdust on your clothes or in your hair or in the house.

And at night, without going down to the basement, you drop the damper and open the check with pulls that always work.

And the water pan is right above the fuel door—very accessible—in plain view, where you can't forget it.

Sunshine furnace management is not even exercise.

Engineering Service Free. McClary's own heating engineers are at your service when you buy a Sunshine Furnace, to give you free expert advice on your home-heating requirements. Write to the nearest McClary Branch and ask for particulars about this service. A Booklet "Comfort in the Home", makes clear all the things you want to know about furnaces, and it is sent free on request.

McClary's
Sunshine
Furnace

London Toronto Montreal Winnipeg Vancouver
St. John, N. B. Calgary Hamilton Edmonton Saskatoon.

I hope we may accomplish something this afternoon. tI seems to me the men they are taking from France to England are to produce more there, and they are not going to look to Canada because they cannot get ships to take the food over. Because of that they are going to farm more extensively in England and they are taking the men from here. We should organize, as all labor is now organized, and stand shoulder-to-shoulder to help one another, instead of helping the politician, then we will not be begging the governments to do something for us. Election times the politicians come around and tell the farmers what fine fellows they are.

Section7. THEREFORE RESOLVED that we, the New Brunswick Farmers' and Dairymen's Association and United Farmers of New Brunswick in specian convention at Fredericton this 26th day of April, 1918, believing it to be in the best interests of the Allied Cause, humbly urge and request the Dominion Government that all efficient farmers, farm laborers and cheese and butter makers, who have and who will consistently devote their time to agriculture, to the satisfaction of their employers, during the seeding, growing and harvesting seasons, be allowed to remain upon the land, to prosecute the defence of the Empire in the second line trenches.

Moved by C. M. Shaw and seconded by J. T. Prescott, that a delegation be appointed to go to Ottawa and present this the resolutions passed to-day, and that similar organizations in Nova Scotia and Prince Edward Island, be wired of our action and requested to take similar action and co-operate with us. Carried.

Moved that the expenses of this delegation to Ottawa be paid jointly by the Farmers & Dairymen's Association and United Farmers of New Brunswick. Carried.

The delegates chosen were:—A. D. McCain, representing the United Farmers of New Brunswick; and L. M. Anderson, representing the Farmers & Dairymen's Association.

Under existing conditions, it was decided to hold no summer meeting this year.

Expressions of regret at inability to attend meeting received from Euclid Potvin and J. D. McKenna were read.

A vote of thanks was tendered the President for his work in calling the meeting.

The best asset a country can have is the farmer who can grow good calves to be better cows than ever he had before. .

FARMS FOR SALE !

1. Desirahle farm for sale, situated at Lower Gagetown, N. B., containing 100 acres or therehy, suitahle for growing all kinds of crops; there is a splendid orchard on the property, containing ahout 500 apple trees of good commercial varieties.

The farm huildings are commodious and exceptionally good and there is ample water supply. Puhlic wharf about one-half mile distant and railway runs through the property.

2. Farm with suitable house and huildings, situated ahout 3 1-2 miles from Gagetown, extending to ahout three hundred acres, ahout one hundred of which is good cropping land, the halance containing a large quantity of valuahle pulp and firewood.

For further particulars apply to

JOHN MIEKLEJOHN, Agent
Crosser Farms, - Lower Gagetown, N. B.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

McINTYRE BROS.
SUSSEX, - - N. B.

WANTED !

20 first class Yorkshire Sows, also 10-15 Chester Sows and Boars for May delivery. Quote prices, f.o.b. shipping point; price to include registration.

THOMAS HETHERINGTON,
Dept. of Agriculture,
Fredericton, N. B.

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale

G. C. Cossar, Prop. J. MeikleJohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls, ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. S. Bloomfield Farm

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm
OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Shorthorn Cattle !

High grade registered stock for sale.

J. E. HETHERINGTON,
CODY'S, - - - N. B.

GUERNSEY BULLS!

I offer for immediate sale, the Guernsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

LOOK ! THINK ! ACT !
Pigs are Pigs Now. What About Breeding Stock?

In Berkshires I have four boars and two sows, farrowed Sept. 25th, 1917. They are well grown and will dress 150 lbs. each in a month's time. They are worth too much for breeding purpose fo kill so will sell at $35.00 each if taken 1st of March also booking orders for young pigs, April and May litters, $8 00 each.

T. J. HAWKINS
"Lone Pine Farm" Stewiack, Col. Co., N. S.

FOR SALE

Best English Blue Orpingtons, beautiful rich blue birds, three dollars fifteen eggs ($3.00). Handsome Buttercups, prize matings, fine birds, $2.00 fifteen.

SARAH E. MOSES SMITH,
WOODWARDS COVE, - - N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

For Milk, Butter, Cheese, Veal, Holstein Cows stand supreme. If you try just one animal you will very soon want more. Write the

Holstein-Friesian Association
W. A. Clemons, Sec'y, St. George, Ont.

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

JERSEYS

Young Bull, solid color, dropped Sept. 1st, 17 Out of R.O.P. dam and by a noted sire—combining the blood of Golden Lad, Tormentor and Flying Fox.

SHORTHORN:—

Young Bull, all red, dropped March 17th, 1917, sired by first prize winner of his class at Halifax, 1915, and a grandson of the grand champ on out of a highly bred and good milking dam.

Two Heifer Calves, all red, out of splendid milking dams and by one of the best sons of "Statley Monarch." One dropped April 29th, 1917, the other Aug. 14th, 1917.

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

Maple Green Farm Holsteins

Just now we are offering some fresh calved cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. butter in 7 days.

Herd sires in service. "Maple Grove Mercena Mercedes," No. 11727, the sire of our 26.54 lb. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter brother to our 25.05 lb. Jr 3 year old.

For particulars write

R. L. HICKS
Dalhousie Jct., - - N. B.

ROSEWARNE
S.C. White Leghorns

I am now booking orders for baby chicks and hatching eggs from my well known bred-to-lay strain. Chicks will be very scarce this spring, and there will be a wild scramble later on for supplies, so get your order in early and pick your date.

My cockerels and pullets, out of same matings as day-old chicks were sold from last season, swept the board at Halifax.

Send for prices and mating list.

ERNEST CRAZE
Port Williams, - - N. S.

GLENRANE STOCK FARM

We are offering some very fine pure bred registered calves from 2 weeks to 8 months old These calves are sired by "Homestead Hengerweld Rooker" ¾ brother to a 26 lb. jr. 3 yr. old. They will be sold reasonably if taken at once. We also have several litters of very fine York pigs.

ROBERT C. HICKS,
West Bathurst, - - - N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM
Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

BUTTER PARCHMENT
Maritime Farmer Office

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st. 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown, with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

J. FRANK ROACH, Proprietor,
Phone 111. Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows: and one ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. Send for our BOOK F BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, Hammond River, N. B.
HOLSTEIN CATTLE AND YORKSHIRE SWINE
WM. S. HARDING, PROP.

We rae all sold out of last years crop of calves. We are now offering some young bull calves sired by Sir Foforit Schuiling. Also a fine litter of young Yorkshire pigs.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS !

Now is your chance to get choice cows sired by Helbon Dehol's Prince, dam's record 31.54 lbs butter in 7 days; cows and heifers sired by Royalty Canary Major, dam's record 34.60 lbs., and from Helbron Dehol's Prince dams, also heifers and calves, both bull and heifers sired by Prince Colantha's Canary B, four nearest dams average 32.84 lbf butter in 7 days and 105 ibs. milk in 1 day and from H. D. Prince and R. C. Major dams. Have decided to sell 40 bead.

Come and see them. Pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a belfer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

Registered Jersey Heifer

We offer for sale the registered Jersey Heifer, "Pride of Rose Bank," 3 years old, milking sired by Foxhall's St. John O'Dreamwold, whose dam gave over 10,000 lbs. milk in a year. Also Peerless Incubator, Barred Rock and White Leghorn Cocks and Cockerels, which would exchange for Barred Rock Hens.

ORCHARD HILL FARM
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Economical Substitutes in Swine Feeding

By G. B. Rothwell, B.S.A., Assistant Dominion Animal Husbandman

The present cost to produce a hog finished for the market, where maintenance, breeding and feeding charges for the dam are properly charged, and where a conservative percentage of the feeding and breeding costs is added to cover overhead charges and risk, would appear fromestimates at the Central Experimental Farm to average $20. A fair, but not excessive, profit should be possible with present pork prices where good management is applied.

The feed situation, however, is far from bright at the present time. Standard hog foods comprise but a short list—corn, barley, wheat by products, and oats. Corn has been practically in a limited way, but at a price almost prohibitive for fattening purposes. Barley is far from readily available, and at top-notch prices. Wheat by-products are now limited to shorts and bran. The former, possibly the most commonly used Canadian hog food, will be available, it is to be hoped, in fairly reliable quantities with no possibility of a surplus, and at a fixed price. Oats at present prices may be used with economy only to induce milk flow and the growth of bone anad sinew, i.e., with the milking sow anad the weaned pig. In short the whole matter of available hog foods rests upon an entirely unstable foundation. Are there avenues or relief?

The Use of Concentrated Substitutes for Cereal Grains

At the Central Experimental Farm durinig the past several years numerous concentrated by-products have been used in the experimental feeding of hogs. A complete resume of such work would be lengthy, and distinctly unprofitable in the present instance. It would be idle to contemplate the use of foods now off the market, or quite unreliable of supply.

Of the concentrates which may now be procured—in, however, limited quantities—cottonseed meal, gluten meal, gluten feed, linseed oil meal, distillers' grains, corn oilcake, and corn bran may be mentioned. Not any of the above concentrates may be listed as readily procurable.

Concentrates for Fattening

In 1915-16 and 1916-17, cottonseed meal, glutten feed, linseed oil meal, and distillers' grains were all shown to have high values for fattening purposes where these feeds entered into the mixtures in quantities depending upon their protein content. Briefly, in 1915-16 the following percentage additions to a basic corn, shorts, barley ration gave economical and healthful results,—glutten feed 20%, linseed oil meal 17%, and cottonseed meal 13%. The fololwing winter, a similar experiment showed the injurious effects (protein poisoning) of in creasing the percentage addition in the case of linseed and cotonseed meal. Wnere fed in the original percentages good results were obtained. Distillers' grains were further shown to give good results as a 20% per cent. addition.

Linseed oil meal may be safely fed as indicated, and is a concentrate to be recimmended at the present time. Gluten feed as high as 30% of the raGlutn feed as high as 30% of the ration is another valuable substitute where procurable. Cottonseed meal, while giving phenomenal results, should not be widely recommended as a hog food. Distillers' grains are becoming increasingly difficult to obtain. Corn oil cake (no experiments at Ottawa), where procurable, is a high-class concentrate fed with shorts or bran and skim-milk. Corn bran, of limited supply, may enter profitably into the ration of the brood sow, or the fattening hog. Not more than 20% should fed owing to the rather fibrous nature of the food. While more in the nature of a by-product, elevator screenings, graded as buckwheat screenings, has given consistently good results, a fact particularly worthy of note at the present time. In 1915, a ration of buckwheat screenings and skim milk proved about equal to a standard ration or corn shorts and oil cake, showing a value of $27.60 at prices then current. In 1918, in a series of experiments conducted in duplicate, buckwheat screenings and milk gave the highest gains in both first and duplicate lots. The addition of shorts, oil meal, and tankage, was aparently in no wise an improvement over the whole screenings.

The one thing to be remembered, however, is that the inferior grades of elevator screeninigs have been proved of little value for swine feeding (C.E.F. 1917).

Concentrates for the Young and Growing Pig

There is little room for deviation from acecpted practice in the feeding of young pigs. A bone building ration with low percentage fibre is necessary. Ease of digestibility is essential. Wheat middlings and skim milk while being taught to eat, with middlings, sifted oats, a little corn, and skim-milk after weaning, form excellent rations. Skim-milk is almost a necessity. To find a substitute, three years of experimental work have been carried on at Ottawa. Tankage, oil meal and skim milk pere the chief centres of interest. Briefly, tankage proved a poor substitute where it directly replaced skim-milk, both in quality of pigs and cost to produce. As an addition to a ration containing skim-milk, it showed consistencly inferior to oil meal. In fact, as has already been pointed out, no benefit could be seen in adding this expensive meat by-product to an already balanced ration. Thus, while skim-milk and corn or barley gave consistently marked results over corn, tankage, and water, it also showed a slight superiority over corn, tankage and milk for weaned pigs.

Tankage, however, may be regarded as a milk substitute. Best results have been obtained at Ottawa where pigs were weaned without milk by supplying the meal dry in a self-feeder part of which was partitioned off and filled with dry tankage. This was consumed as required. Water was, of course, supplied at all times. While experiments at Brandon in 1916, with the feeding of tankage to young pigs, show conspicucusly the value of skim-milk, the former stood in the light of a good substitute. Grain only produced gain at a cost of 9.8 cents; grain plus 16% tankage 7.1 cents, anad grain plus skim milk 6 cents. The pigs fed averaged 85 pounds in weight, as againist six to eiight weeks old weanlings of the Ottawa tests. It must be remembered, however, that the reputation for tankage has been gained largely through its use as a balance to corn, a grain that for the production of economical gainis must be fed with some protein suplement.

The Use of Soiling and Pasture Crops

Soiling Crops.—The use of green feed, cut and fed to hogs, while applicable in cases where a few hogs are kept has the following disadvantages: (1) It is wasteful—the hogs soil much of the material; (2) the feed when exposed to the sun becomes soft and unpalatable; (3) laborious, — nowadays the hog should largely feed himself. Nevertheless, in 1913, on a meal valuation of $28 per ton, green cut clover was worth $4.81 as a hog food, replacing one-sixth of the meal ration. In 1915, green cut rape was actually fed at a loss when added to the meal and milk ration. In 1916, gree cut alfalfa showed a value of $2.62 per ton. The beneficial effect of feeding clover and alfalfa to pen-fed hogs was very evident from a health standpoint.

The subject of pastures for the growing pig is receiving much attention at present. Owing to cramped quarters, little experimental evidence is available from Ottawa, and informatioin is largely gleaned from stations at Lacombe, Brandon and Lethbridge.

As a single pasture crop alfalfa would appear to be unexcelled. Rape has also given good results. Clover is almost equal to alfalfa, a significant fact, considering that the growing of red clover is wider spread, subject to fewer difficulties, and generally better understood than alfalfa. Heavy seedlings (3 to 3½ bushels per acre) of barley, oats or wheat have given excellent results. Of the cereals sown singly, barley has proven the best pasture crop. A mixture of barley, wheat, and oats, equal parts, has also been used sucessfully, later reports indicating, however, that the mixture is inferior to barley alone. As a commercial proposition, a summer pasture of alfalfa, clover, or a spring-sown grain or grain mixture will give cheap, home-grown self-harvested feed for growing pigs. Late summer and fall pasture should be suplied by rape. As to the stock-carrying capacity of the crops mentioned, an acre is conservatively shown to pasture from ten to fifteen hogs in growing season.

The economy of pasturing is strikingly shown in one experiment (Lacombe), where the cost per hundred pounds gain in paddock feeding was $5.30. The average cost to produce with six crops mentioned was $3.54.

Vegetables, orchard, and garden refuse have a certain value as hog food, and, while no actual data is available, such material is carefully collected, and affords a healthful and more or less efficient meal saving food for breeding stock and growing pigs. It should be emphatically pointed out that, it has been clearly demonstrated that the use of the above food should not be forced too heavily upon the pig under three months. For the weaniing, a ration light in fibre is essential.

Milk Products as Substitutes for Meal

Skim-milk for the growing hog may rightly be claimed as the best single food. The common statement that with meal at $20 per ton, skim-milk is worth 20 cents per cwt. is all too conservative. oFr light, growing hogs, 60 pounds and over, 400 pounds skim-milk has showed equal on the average to 100 pounds meal, which at present prices gives milk a meal equivalent value of 63 cents. While the above may be taken as an average, experiments too numerous to mention specifically have shown that for the young growing hog, skim-milk at pre-war prices for meal ($25 to $28) showed values ranging from 28 cents with heavier hogs, to 79 cents for lighter individuals.

Buttermilk, fed fresh, wherever comparison has been possibre, is the equal of skim-milk. Whey is not generally procurable on the Farm system. While not regarded as valuable to the same extent as either of the two previous products, reports from Lacombe in 1917 show 100 pounds fresh whey capable of saving 19.2 pounds meal, or attaining a value of almost 20 cents per cwt. with meal at $20 per ton. Much of the palatability and consequent value of whey, is frequently lost through feeding it in a badly soured or desomposed state. Of all milk products it may generally be stated that the value of whey is least appreciated. At the present time it is possibly the only one wasted to any extent., and particular stress should be laid upon its value as a meal substitute, fed sweet and fresh.

Skim-milk must not be over-fed, however, for most economical returns. A small proportion of skim-milk fed shows a high meal equivalent. Much

(Continued on page 509)

Cutworms and Their Control

Injurious insects wage a heavy toll on farmers, fruit growers, and gardeners. The annual loss from such pests amounts to many millions of dollars. Among the destructive insects, the cutworms are insidious enemies which necessitate prompt warfare if we would save the enormous quantity of food-producing plants which they destroy every year.

In general, cutworms are similar in appearance, being smooth, cylindrical caterpillars, abotu one inch or more in length, and in colour of some dull shade similar to the ground in which they hide during the day.

The moths, which lay the eggs from which the cutworms develop, are of a grayish or dull brownish colour, and measure with the wins spread, from about an inch to two inches in width. When at rest the wings lie folded over the body. Being nocturnal in habit they are seldom seen during the day time, but in the early evening they appear in search of the nectar of flowers. The eggs laid by these moths are pale in colour, dome-shaped, and less than one twenty-fifth of an inch in diameter. They are deposited in clusters or masses on the leaves of trees, shrubs, weeds, grasses, etc., and some kinds even lay their eggs on the soil. They are chiefly active in June, July and August.

Injury by cutworms is mostly in spring when plants are young and succulent, but there are a few species which occur in destructive numbers as late as the middle of summer. As a rule, however, cutworm injury ceases before the end of June. As their popular name indicates, these caterpillars have the habit of cutting off the plants during the night, near the surface of the ground or a little below it. When they are present in numbers, in a garden or field, the plants will soon be seen to have been cut, or eaten off, and if an examination is made, the cutworm will most likely be discovered in the soil, coiled up, and just below the surface. Not all cutworms, however, feed in this manner; some climb up into fruit trees or such plants as currants, gooseberries, tomatoes, etc., and feed upon the foliage or upon the fruit. In fact, when they are excessively abundant, they will attack anything green and juicy. In such years some kinds assume the marching habit, so characteristic of the army-worm.

Methods of Controlling Cutworms.

Preventive Measures.

Clean Cultivation.—The eggs of most of our cutworm moths are deposited soon after the adult insects appear in early or midsummer. As they are laid on weeds, or other nearby succulent vegetation or upon the soil or the remnants of crops, it is most advisable to plough deeply, in the early fall, all fields where cutworms have been troublesome. Such clean cultivation not only destroys many of the eggs and the young hibernating cutworms, but also numbers of other insects which winter beneath fallen plants, refuse, etc. Fall ploughing should always be practised where circumstances will permit, not only for the destruction of hibernating insects, but also because the land will be put into better condition for early spring sowing. In gardens and orchards, all remnants of crops, or other refuse, should be carefully gathered together and destroyed by burning.

Protective Bands.—In fields or gardens where such plants as cabbages, cauliflowers, tomatoes, etc., are set out, protection against cutworm attack can be had by placing a band of tin, or wrapping a piece of paper, around the stem of each plant at the time of setting out. Tin, of course, lasts longer than paper and is, therefore, to be preferred. Pieces about 6 inches long and 2½ inches wide are sufficiently large for this purpose, and can easily be made itno a cylindrical shape by bending them around a broom handle. Old tomato or other tins, in which canned vegetables have been prepared, are useful for this purpose, and if thrown into a bonfire the tops and bottoms fall off, leaving the central piece of tin which, if cut down the middle, will be sufficient for protecting two plants. When paper is used, cut this into pieces about three inches square. The pieces may be threaded on to a loop of string, which may be tied to the box in which plants, such as cabbage and cauliflower, are taken to the field. About two inches of the paper should be left above ground.

To protect fruit and other trees from climbing cutworms, a band of cotton batting four inches in width may be fastened tightly around the tree near the bottom. The wire or strong string holding the cotton batting should be placed near the lower edge, so that the upper patr of the band can be hung down, thus forming a sort of funnel, or cone-shaped mass of batting. Bands of tree tangle-foot are also useful in preventing the caterpillars from gaining access to the foliage, etc., of treesfi

Remedial Measures.

Poisoned Bait.—The poisoned-bran remedy is the one which is now used most extensively for the destruction of cutworms generally. This is made as follows:—

Bran	20 pounds
Molasses	1 quart.
Paris green, or white arsenic	½ pound
Water	2 or 2½ gallons

Mix the bran and Paris green (or white arsenic) thoroughly in a wash tub, while dry. Dissolve the molasses in the water and wet the bran and poison with the same, stirring well so as to dampen the bran thoroughly.

Shorts or middlings in place of bran are also useful for cutworm control.

A simple formula for small garden is one quart of bran, one teaspoonful of Paris green, and one tablespoonful of molasses, with sufficient water to moisten the bran.

The mixture should be applied thinly as soon as cutworm injury is noticed. It is important, too, that the mixture be scattered aften sundown, so that it will be in the very best condition when the cutworms come out to feed at night. This material is very attractive to them, and when they crawl about in search of food they will eat it in preference to the growing vegetation. If the mixture is put out during a warm day, it soon becomes dry, and is not, of course, as attractive to the cutworms. In treating fields of hoed crops, such as beets, turnips, etc., a simple method is to have a sack filled with the bran hung around the neck, and by walking between two rows, and using both hands, the mixture may be scattered along the row on either side. When cutworms are so numerous as to assume the walking habit, the poisoned bran may be spread just ahead of their line of march. In ardens, where vegetables or flowering plants are to be protected, a small quantity of the material may be put around, but not touching, each plant. Fruit trees may be protected from climbing cutworms in the same way, but the mixture should, of course, not be thrown in quantity against the base of the tree, otherwise injury may result from the possible burning effect of the Paris green.

Under field conditions, 20 pounds of poisoned bran is sufficient to treat about 3 acres. Scattering the mixture thinly places it where it will reach the greatest number of cutworms, and when thus spread there is no danger of birds, poultry or ilve stock being poisoned.

Observations have shown that the cutworm moths very often lay their eggs on weeds, etc., on the higher elevations in fields, and that the young cutworms migrate therefrom to other parts. If such places are watched from time to time in spring, it may frequently, be possibel to control the outbreak by scattering the poisoned bait chiefly within such areas.

Fresh bundles of any succulent weed, grass, clover, or other tender vegetation, which have been dipped in to a strong solution of Paris green (one ounce of Paris green to a pail of water), may be placed at short distances apart in an infested field, or between rows of vegetables, or roots, and will attract many cutworms and protect the crops from further injury. In Alberta the common weed known as Stinkweed has been successfully used. The bundles, also, should be put out after sundown, so that the plants will not be too withered before the cutworms find them. As in the case of the poisoned bran, they should be applied just as soon as the presence of cut-worms is detected.

The above poisoned baits have given excellent results for surface-feeding cutworms, such as the Red-backed cutworm, the striped cutworm, etc. For those kinds, however, as the Glassy cutworm, which feeds almost entirely underground, these baits are, of course, of little value. For such cutworms it is important to keep the land to be used for grain crops teh following year as free as possible from long grass and weeds. If this is done, there will be no tall vegetation to attract the female moths for the purpose of egg-laying.

Furrows or Ditches.—As a rule, when cutworms assume the marching habit, they are nearly full-grown and, of course, are very ravenous. In such instances, applications of poisoned bran have been extremely useful in stopping the attack. Severe outbreaks may also be largely controlled by ploughing deep furrows in advance of the line of march of the cutworms. The progress of the caterpillars is thus stopped, and when a furrow is entered by them, a log drawn by a horse may be dragged through it and the cutworms in this way will be crushed and killed. If a series of post holes about a foot deep and about 15 feet apart are dug in the furrow, hundreds of the cutworms will fall into them, and they can then be easily killed by crushing them with the blunt end of a post, or a piece of fence rail.

Handpicking.—In small gardens, as soon as injury is noticed, the cutworms can, as a rule, be easily located in the soil, about an inch or so beneath the surface, and within a radius of a few inches of the plant, and destroyed by hand.

The Manurial Value of Clover

(Experimental Farms Note)

The amount of semi-decomposed vegetable matter or humus present in our cultivated soils—sandy and clay loams—bears an intimate relation to their productive capacity.

Humus not only fulfils the mechanical function of rendering soils porous and more retentive of moisture, but furnishes also the essential medium for the activities of the bacteria which liberates plant food in the soil. Furthermore, humus constitutes the chief natural source of the soil's nitrogen supply.

Applications of barnyard manure may be considered the chief means employed in the maintenance of humus in the soil. Supplementary means are the growing and ploughing in of a green cover-crop such as rye, buckwheat, rape, vetches or clover. Of these, clover—where conditions are conductive to its satisfactory growth—is to be generally perferred. By means of its deeply ramifying roots, clover disintegrates and aerates the lower soil layers and brings up therefrom plant food supplies unattainabel by other more shallow rooted crops.

An additional advantage which clover, in common with all members of the legume family, possesses it that of its ability to assimilate the free nitrogen of the soil atmosphere by means of minute bacterial organisms living and operating in small nodules on its roots. Thus clover gathers the greater part of its nitrogen from the air, and its phosphoris acid, potash and lime largely from soil depths beyond the reach of the roots of ordinary crops, consequently enriching the surfac esoil with these constituents for the benefit of suceeeding crops.

How does clover compare with manure as a fertilizer? Barnyard manure of good average quality contains approximately 10 pounds nitrogen, 5 younds phosphoris acid and 10 pounds potash per ton. Therefore 10 tons of barnyard manure would furnish about 100 pounds nitrogen, 50 pounds phosphoric acid and 100 pounds potash.

Experiments conducted at the Central Experimental Farm, Ottawa, have shown that a vigorous crop of clover will contain, at a moderate estimate, in its foliage and roots, from 100 to 150 pounds nitroen, 30 to 45 pounds phosphoric acid and 85 to 115 pounds potash per acre.

A good crop of clover from one acre if it were turned under may, therefore, be deemed equal, in fertilizing value, to an application of ten tons of barnyard manure.

In the experiments referred to, 10 pounds per acre of common red clover was seeded down with various grain crops, while adjoining plots were seeded with grain alone. In no instance did the growth of clover depress the yield of grain with which it was seeded.

In the following year, fodder corn (Leaming) produced 8 tons, 480 pounds more after wheat with clover than after wheat without clover. After barley and oats, increases of 11 tons, 1280 pounds and 5 tons, 1440 pounds respectively, of corn, per acre, were obtained on the clover plots.

With potatoes the results were equally striking. After wheat, barley and oats with clover the increases were, respectively, 43 bushels, 20 pounds; 29 bushels 40 pounds and 24 bushels of potatoes, per acre, as compared with the yields from adjoining plots without clover.

The full benefits from clover will as a rule be noticeably persistent for several years.

On soils which are deficient in lime, a satisfactory growth of clover will be encouraged by an application of, say, two tons of ground limestone per acre. As a phosphatic fertilizer, designed to benefit both the grain and the clover, 300 pounds of superphosphate or 500 pounds of basic slag, per acre, may be recommended.

Unleached wood ashes contain, on an average, from 4 to 6 per cent of potash, about 2 per cent of phosphoric acid and from 20 to 30 per cent of lime. They are eminently suitable as a fertilizer for clover and, when procurable at a reasonable rate, should be applied at the rate of from 25 to 40 bushels (1000 to 1600 pounds) per acre.

Always use sufficient litter in the buildings to absorb all the liquid manure, the most valable portion as regards both nitrogen and potash. Air-dried muck and peat are useful as absorbents that can be employed to supplement the straw or sawdust beddings, if the supply of these is sort.

Will it Pay to Spray in 1918

The above question is agitating the minds of many apple growers at the present time.

The prospects are that some of the sections that Nova Scotia supplied with apples in 1917, will themselves have a moderate crop for their own use in 1918. It is more than probable that the major portion of this crop will be of poor quality if the season is in any way normal for the development of apple scab.

The paramount question in many minds is the question of price in 1918. Although we do not consider that the question of price for 1918 should be the dominant factor in influencing us to or not to spray in 1918, let us examine the point for what it is worth. What do we know about the 1918 price? In 1916 people expected normal prices for potatoes when they dug the crop, before the next spring many potatoes were sold for around $8 per barrel. In 1917 people xpected high prices for potatoes and many growers sold in the field for $4 per barrel, today anq quantity of potatoes can be bought for $1.50 per barrel and less. In July, 1917, many farmers cut their hay not expecting to be able to dispose of it in 1917-18 for the cost of gathering. In November, 1917, many lots of hay sold for $7 per ton loose. Within the past week hay has sold from the barn in the same districts for $19 per ton. In 1914 the general talk was "Apples will bring nothing" yet we got fair prices. In 1915 the talk was even worse and we got better prices. In 1916 the talk was that apples would scarcely be worth picking, and we got better prices than ever. In 1917 many expected low prices for apples during the sprinig and summer, but when the crop outside became known and outside buyers came to the country, expectations were changed, everyone looked for higher prices. With strange buyers bidding against each other in new territory for fruit, with which they were not familiar, prices were forced too high and apples were not consumed as they should have been early in the season. As Messrs. Gray and Vroom express it, the price nailed the barrel too tightly to the warehouse floor, it prevented apples from moving and apples were consumed by the classes only and not by the masses. The result was, apples moving too late or out of season the year through, a glut at the end of the season and a slump in prices which is causing untold loss to both growers and speculators. What does anyone know as to the price of apples in 1918? We know the quality of apples consumed by a given number of people fluctuates most widely and is influenced almost wholly by price so we can rest assured that if the price is low, say one half that of October, 1917, apples will be used as a food and not a luxury, that they will be consumed by the masses as well as the classes and the consumption will be enormous.

We expect that the quality of apples produced in many sections will be below normal. In order to keep well and sell best we must have our quality as high as possible. It has been amply demonstrated in the past that spraying and the growing of clean fruit pays even better in the years of large crops than in those of small crops for good quality apples have some chance of good prices in years of plenty while poor quality apples have practically no chance in such years. Aside from the possibility, which every man must judge for himself, of our marketing part or all of our 1918 crop in our normal market, London, the most important consideration is the effect of straying or not spraying on the crop of 1919. We know and are able to state definitely that in Nova Scotia the greatest benefit from spraying comes from increasing the crop the year following the application of the spray. If we are to get a good set of apples we must have strong fruit spurs and buds, to get them the leaves must be retained late the previous season, and in ordr to get the leaves to stay on late, we must keep them free from fungus diseases by spraying. This is absolutely the most important consideration in spraying in Nova Scotia, and by neglecting spraying in 1918 we are, if the season is at all normal, insuring a smaller crop or a failure for 1919.

We know the demand and need for other foods than apples and all will make the greatest efforts to produce potatoes, beans, grain, etc. We know that there is a labor shortage, but the spray gun amounts to more than saving a man in spraying. We know that our apples if not sprayed, will, according to Prof. Blairs' figures, cost us about $2.50 per barrel tree run on the average. Spraying costs about 20 cents per barrel, would anyone put the difference in value between tree run sprayed apples and tree run unsprayed apples as low as eight per cent? We think not. The orchards of the Annapolis Valley have been termed by Prof. M. Cumming as the big permanent asset of the valley. We know that our orchards, taking the section as a whole, are probably in better shape than any others in America, on account of ours having been cared for during the past three years, while other sections neglected their orchards to a greater or less extent. We expect to be paid for this care by having when peace is declared, orchards in good condition and producing good fruit. Can we aoffrd to lose all of this advantage by neglect in 1918?

We must grow all of the grains and vegetables possible, but for our economic future we must also keep our big permanent asset our apple orchards from depreciating. We do not want the same kind of a crop in 1919 that Ontario had in 1917. Apple scab and neglect of spraying in 1916 spoiled the Ontario apple crop in 1917.—By G. E. Sanders, Dominion Entomological Laboratory, Annapolis Royal, N. S.

United Farmers Receive Replies to Resolutions

The following replies have been received to Resolutions passed at the Agricultural Societies United which was held at Woodstock on April 23rd and 24th. They speak for themselves.

May 7th, 1918.

Dear Sir:—

Re prices of feeds and overstock of flour.

We thank you for your copy of resolution passed by the United Farmers of New Brunswick at their annual meeting, calling attention of the Canada Food Board to the violation of their order fixing the price of feeds and we are pleased to advise the United Farmers that the order bringing all retail dealers of flour and feeds under license is now operative and that the order bringing all wholesale dealers and brokers and commission men handling flour and feeds is operativie June 1st.

We are further pleased to advise all surplus flour over and above specified requirements must be returned through the channels specified by May 15th, or such surplus may be seized by the Canada Food Board thereafter. The regulation provides the following: for consumers living in towns, villages and within two miles of licensed dealers, (all dealers must secure license to remain in business legally) 15 days supply. Consumers living more than two miles and less than five miles, 30 days supply, and those living more than five miles and less than ten miles 60 days supply, those livinig more than ten miles from a licensed dealer may have 120 days supply on hand.

Apply to dealers: all dealers both retail and wholesale in flour and feed shall have not more than 60 days supply of flour on hand at any one time. The method of enforcing regulations is as follows: Consumers having an overstock of flour which they have had to purchase in order to secure feed, or have bought with hoarding intent, must return this to the dealer from whom they purchased it, retaining only their legal requirements as specified above. The dealer who takes this shall pay for it at the price which he received for it or the price for which he was selling just such flour at April 20th, whichever charge is the lower. When the dealer finds he is overstocked his redress lies in his returning the flour to the mill that supplied him, and his procedure is to notify the Millers Committee, 178 Queen Street, Ottawa, of the amount of flour he has on hand above his ordinary 60 days requirements, giving the packages and brands of same, and the Millers Committee will at once arrange with the mill to take this flour back and the price the dealer will receive from the miller will be either the price that he paid for the flour, or the price the miller would have charged him for the same brand of flour at April 20th, whichever is toe lower.

We trust we have made this matter clear to you, if not please adviise us.

Yours faithfully,
CANADA FOOD BOARD.

Controlling Potato Disease From the Start

(Experimental Farms Note

Potatoes are plentiful this spring. Procure your seed from a field which produced a good heavy crop the previous year. The smooth appearance of the seed alone is no guarantee of a heavy crop. Disinfect the potatoes before cutting the seed. Soak them for three hours in a barrel containing either of the following solutions:—

Corrosive sublimate: 2 oz. in 25 gallons of water. (Note: fatal poison to man and beast.)

Formalin: 1 pint in 25 gallons of water.

In cutting for sets, throw out all potatoes showing rot or brown spots, or rings near the stem end and in the flesh.

Cut the seed immediately before planting. The longer you keep them cut, the smaller the yield. Be prepared to meet the ravages of the potato bug. Spray your potatoes. Spraying pays! Use poisoned Bordeaux mixture. The poison for the bug, the Bordeaux for Late Blight. This is the solution:—6 lbs. bluestone, 4 lbs. lime, 40 gallons water. Dissolve bluestone first in 15 gallons of water. Slake the lime in another vessel, strain it if lumpy. Pour both solutions together and make up to 40 gallons by adding water. Add arsenate of lead paste, 2 to 3 lbs. per 40 gallons of solution; or use 8 oz. Paris Green and 1½ lbs. of arsenate of lead for 40 gallons solution. Stir well, and fill pump through fine meshed sieve. Particles will clog nozzles and are most annoying. Spray thoroughly, and cover all leaves well with spray. Don't drench. Commence as soon as the plants are a few inches high and continue every two weeks throughout the season.

For a large field use a high pressure horse-power outfit. For smaller areas, there are many good hand-sprayers on the market.

Get your spray chemicals right away and arrange for the purchase of a sprayer; sometimes it is a good practice for several farmers to club together and buy a good power sprayer.

Watch the field, and throw out any sickly-looking or dying individual plants. Mark the one hundred best hills for future seed uspply. From these select 80 which yield the largest number of uniform potatoes and plant these separately next year, and increase this practice until your strain yields highest in the neighbourhood.

Spraying

(Experimental Farms Note)

Unless many kinds of both useful and ornamental plants are protected from injurious insects and fungous diseases by spraying, the loss in fruit and vegetable crops may be very great, and, in the case of ornamental plants which would otherwise have attractive foliage and bloom, they may be rendered very unsightly.

The spraying of fruit trees should be begun just after the buds have broken in the spring and repeated at the times recommended in the spray calendars and pamphlets which are issued by both Federals and Provincial Governments and in which is given information in regard to the treatment of the different kinds of insects and diseases most likely to cause damage.

The apple scab causes, perhaps, more loss than any other plant disease in Canada, yet this can be controlled and clean fruit obtained, by thorough spraying with either Bordeaux mixture or Lime Sulphur. Other diseases and insects can be kept well under control also by the spray which has been found best for each.

Spraying is a rather expensive operation and it should be done in an intelligent manner, otherwise it may be wasted money. For instance, if the spray to kill the codling moth, which affects the apple, is not applied within a very few days afther the flowers fall, the sepals or lobes of the calyx will have closed over the opening or "calyx cup" in the end of the apple into which it is important to spray the poison. As it is in the "calyx cup" where most of the insects begin work, they are not likely to be poisoned if spraying is delayed and the apples will be wormy. A spray mixture or solution which will control one insect or disease may be of little or no use in controlling another. Arsenical poisons are the best for biting insects, while soap or tobacco sprays are best for those which suck their food and which have to be killed by contact, and certain sprays intended to kill insects will not control fungous diseases.

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MAY 28, 1918

DATES OF ISSUE

June 11-25

The New Brunswick Potato Growers Association has arranged for their annual summer field crop contests to take place again this year, ie,—(1918). Everyone that is interested in the Potato Industry, and who wish to see the industry advanced and developed, not only as to quantities that are being produced but, as to quality as well, should become members of this Association. Potato growers and all commercially interested in potato production, within the Province, are eligible for membership to this organization, by the payment of one dollar ($1.00) annual dues, to the Secretary. By joining this association, one is eligable to enter in the summer field crop contests, the annual winter show, which will be held on January 8 and 9, 1919, and in connection with this will be held, the regular annual Convention at which the different phases of the production of this important crop, will be discussed, and lectures will be given on the following subjects, viz,—improved methods of cultivation, suitable varieties, seed improvement, grading and standardizing, marketing, eradicating and controlling fungus and insect diseases, by the best authorities in America.

Farmer—join this organization now and help to further the good work that it is trying to accomplish, and by so doing boost your own Province and keep up the good name of N. B. for producing first class potatoes. Entry forms will be supplied by writing the Secretary, A. C. Taylor, Woodstock, N. B.

* * *

Have you good pasture for the sows and litters? Clover, rape and young rye are excellent for this purpose.

THE MILITARY SERVICE ACT

Possibly no branch of industry in this country has been more seriously effected by a War measure than the farmers of Canada under the new provisions of the Military Service Act. Thousands of farmers had prepared for increased production, yet without a moments notice the help of some of the best farms in Canada have been taken for Active Service. Farmer's organizations have protested to Ottawa, but the Government has explained that the need for men at the front is more pronounced than the need of Greater Production at home. However, the situation itself suggests this, that Canadian resources for prosecuting the War have not been as highly organized as might be expected from the amount of newspaper chatter that has been inflicted upon the residents of the Dominion during the past few years. We have heard of the organization of this branch of Canadian industry and of that section of endeavor, but when the showdown came in the enforcement of the somewhat drastic amendments to the Military Service Act, it found two of the most important departments in the Dominion Government's service engaged in a strenuous tug of war. The Department of Agriculture had been appealing for several years for increased production. Thousands of farmers in all parts of Canada had collectively invested millions of dollars in preparing to assist the Department of Agriculture and Food Control rBanch in providing increased food stuffs. Then the Militia Department kicks over the milk, and the result is that the farmers of this country are in a quandry as to what they should do. Of course the majority of them will put their shoulder to the wheel and see that their own boys are provided with food, but the whole incident suggests, and strongly suggests, the need for co-ordination in Government action. The Department of Militia should be pulling with the Department of Agriculture and not away from it. Surely after four years, the heads of the Government of Canada have learned a few lessons. If the farmers are really needed at the front, and that view must be accepted in war times, then in Heaven's name let us see that the resources of this country are really organized, and that real service is given by every branch of Canadian industry. The time for grafting, the time for loafing, the time for multi-millionaires and that sort of thing has gone by. Political crooks should be dealt with as they are being dealt with in France, by a firing squad with their backs to the wall. The farmers are having their affairs cleaned up, so let us devote a little time to some of the other industries.

THE MILL FEED SITUATION

The Maritime Farmer would again impress upon its readers the necessity for providing against the shortage in the supply of mill feeds in 1918. A review of the feed situation emphasis the wisdom of taking delivery of all available feeds in June and July. If you can get bran or shorts in these months take them. Later it will be impossible to get anything in the way of mill feeds before the Western crop is available and then the outlook will be attended by grave uncertainty. The Maritime Farmer is prepared to act as Agent for Agricultural Societies which require feed, but we would again point out that unless definite orders, accompanied by an undertaking on the part of a chartered Bank to protect drafts for goods are filed with us by June 15th, the Farmer will not undertake to assume any responsibility for the filling of orders. It is poor policy to wait until November and December when railways will be tied up with war transport and then complain because feeds cannot be procured. Complaining never accomplished anything, and we would suggest that if action is to be taken it be taken at once. If you are interested write the Martiime Farmer.

* * *

Good bulls are scarce; don't part too quickly with the proven sire.

HOME DEFENCE OFFICERS STILL EMPLOYED

Halifax can still boast of many Home Defence Officers. There are among them, men who have been engaged in discharging Military duties in that City since August, 1914. Their wives have been drawing Separation Allowance, they have had automobiles and chauffeurs placed at their disposal, and unless conditions have changed, they have used men from the farms of Canada to perform various menial duties about their homes. These men have been held up to ridicule from one end of Canada to the other. It was suggested to a former Government, that their services be dispensed with and their places taken by men who had seen actual warfare. However, this was not done. After the Union Government assumed office, not a few of those Safety First Heroes were displaced by returned officers. However, there are still glaring instances where men of this stamp are still retained.

With the Military Service Act taking the last man from many of the farms in Canada, and with new taxes being imposed on this country, and the third Victory Bond issue about to be launched, the Government must make up its mind that the services of these men must be dispensed with, or it will sell fewer Victory Bonds. People are tiring of the spectacle of Hot House Officers. We have had altogether too many of them in this Country, and every officer should have an opportunity of going overseas or he should be dismissed ignominously from the service. The Maritime Farmer proposes to have something further to say on this subject in the near future.

Have you all the farm labor you require? If not, why not get in touch with some of the "Soldiers of the Soil" in one of your nearby towns. A strong, willing boy of the teen age, if properly used and handled, will get over a lot of work and do it well.

* * *

The best place for manure is on the soil; the second best place is on the soil, distributed as uniformly as possible. A manure spreader earns its cost in a few seasons in saving labor and doing more effective work.

* * *

Fertilizing materials are high in price and difficult to procure. The range of chemicals customarily purchased as plant food requirements, have gradually narrowed down since the war began in 1914, until today there are very few materials from which a choice can be made.

Serious as the condition is at the present time, it is quite possible that it will be more difficult than ever to procure supplies for 1919.

It behooves every farmer to plan for the conservation of all classes of farm yard manures and other fertilizing materials that may be procured locally.

Plan to place your orders for chemicals early in the season. It is the only way whereby you can be reasonably sure of getting them in good season, providing they are at all procurable.

* * *

Save the good calves for breeding. Good dairy cows will be high in value for many years to come.

* * *

Are you making plans for the green food crop to tide over the short dry pastures of midsummer and early fall? Mixed peas and oats, and clover tention should be paid tothe growing of roots,

* * *

Now that middlings, bran and other feeds are high in price and almost impossible to procure in sufficient quantities to fill the demand, more attention should be paid to the growing or roots and peas and oats. Several farmers of our acquaintance, who grow large quantities of oats and peas, and who crush these grains for their live stock, do not worry a great deal about the scarcity of mill feeds and incidentally save handsome sums of money that would otherwise be sent out of the province.

ECONOMICAL SUBSTITUTES IN SWINE FEEDING

(Continued from page 505)

valuable feed is not only wasted, but lost with disaster to the pig as well, from over-feeding skim-milk. A study of experimental evidence would show that for the best results with young pigs, 1 pound of milk to 2.5 or 3 pounds of meal should be fed. A greater proportion of milk shows a decreased value as a meal substitute. For older hogs less milk may be used, tests and general observation at Ottawa indicating that for the 100 pound hog and over not more than 5 pounds should be fed daily.

Practice has idicated the advisability of feeding milk sweet to very young pigs. As the digestive system becomes stronger, however, comparison shows little difference in the results of feeding sweet or soured milk provided whatever condition favored is uniformly kept up, i.e. milk always swect or always sour. Sour milk is certainly easy to obtain, and would also seem to have a beneficial action upon the digestive apparatus not seen with the sweet product. Best results with whey or buttermilk have usually been obtained where they are fed fresh, before sufficient change has taken place to decrease palatability an ddigestibility.

Saving Labor in Hog Feeding

Practice indicates that two feedings daily is sufficient for the fattening hog; indeed, that with the exception of the young pig, feeding twice daily is preferable to three. In 1914 at Brandon, this fact was indicated, no appreciable difference in gain being shown to balance the extra labor of feeding. Realizing that the indication of one experiment is not conclusive, it may be said that close observation at Ottawa and findings of other institutions point to the same result. Many hog men feed breeding stock, and even growing hogs on good pasture but once daily. After such a statement, there is an apparent inconsistency in the fact that results equal to those of expert hand feeding may be obtained where the food is placed within reach of the hog at all times. Yet such is the case. Experiments at Ottawa, Brandon and Lacombe all point to the feasibility of the self-feeding method, and to the fact that it gives results equal to hand feeding with a reduction of from 6$% to 80% of the labor of feeding.

Self-feeding Animals

At Ottawa, the use of the slef-feeder vs. trough feeding for three years would indicate (1) self-fed hogs require .1 pound more meal per pound gain than to the trough fed (average of two years); (2) that entirely aside from the saving of labor, hand feeding gave rather cheaper costs (.29 cents) per pound gain; accounting ofr labor saved, this slight gain would be reversed; (3) that invariably hogs may be finished in shorter time where self-fed; (4) that waste is almost entirely eliiminiated (provided the feeder is of correct design); (5) that digestive disturbances sometimes caused by over-feeding by hand are rarely, if ever seen; (6) that while it is quite possible to wean little pigs direct to the feeder, they make more economical gains where hand fed until three months of age.

At the Experimental Farm at Brandon, Man., self-feeders gave excellent satisfaction in pasture experiments conducted in 1916, and their use was recommended by the superintendent. No comparative results were available.

The Self-feeder on Pasture

At the Experimental Station at Lacombe, Alta., where swine feeding is a major feature, self-feeders were tested in 1916. This experiment, conducted on pasture, idicated a greater grain cost per pound gai nfor the self-fed hogs of .84 pounds, and a lesser time cost of 51 days in a feeding period of 92 days. While, as at Ottawa, hand-feeding here gave slightly lower grain costs on a short feeding test, later indications were that self-fed hogs, fed to a finish, showed greater economy of gain than those fed by the common method.

During the past season the self-feeder-pasture system is shown as being the most economical. Rape pasture saved 2.453 pounds of grain per acre, as compared with the grain cost of producing the same amount of pork without pasture, both groups being self-fed. Rape pasture, with meal self-fed, carried hogs at the rate of 9,254 pounds per acre for a period of one hundred and forty-six days. For the pasture season, with grain self-fed, indications are that an acre of land will carry on an average of four thousand pounds live weight hogs. As for the self-feeder, this device would appear to increase the capacity or power of one man, one hundred per cent. at least as compared with hand feeding.

As to economy of grain, these later experiments showed for the self-fed group 4.34 pounds of grain per pound gain, as against 4.72 pounds for the hand-fed lot, both on rape pasture With self-feeder, the grain cost per pound gain is usually higher than where hand-fed. At Ottawa, in 1917, the following results were obtained on dry lot feeding:—

	Meal, milk (trough-fed)	Meal, milk (self-fed)	Meal tankage (self-fed
Average weight per pig at start	16.9 lb.	20.8 lb.	26 lb.
Number of days in experiment	88 days	66 days	66 days
Average weight per pig at finish	92.1 lb.	90 lb.	60.9 lb.
Average daily gain	8.5 lb.	1.05 lb.	.53 lb.
Meal eaten per pound gain	1.51 lb.	1.79 lb.	3.9 lb.
Skim-milk per pound gain	5.2 lb.	4.1 lb.	———
Cost per pound gain	4.8 lb.	5.3c.	10.1c.
Cost per pound gain	4.8 lb.	5.3c.	10.1c.

The rapidity of gain of the self-fe group, the value of skim-milk as a meal substitute, and the high cost of production of the tankage fed group, are points worthy of note.

Facts and Deductions for the Coming Season

1. Wheat by-products, barley corn, and certain of the concentrates already mentonied, may be procurable during the coming season. There is no guarantee of supply.

2. Barley is practically the equal of corn. By growing barley this summer, the hog feeder may be more in dependent of the feed market.

3. All possible conservation of meal is desirable. Milk products, unless their use is possible for direct human consumption, form the greatest of pork producers and grain substitutes.

4. Garbage, where the collection of such may be arranged and regulations complied with, is almost a complete food in itself, or at least, possible of substituting a large part of the grain ration.

5. Middlings, the food of the little pig, and no longer obtainable, may be replaced by 70% shorts, 20% corn meal, and 10% oil meal. With this milk in some form is the one best food. Too much substitution with the young pig is likely to result in disaster.

6. Increased hog raising with decreased labor, is made possible by the self-feeder.

7. Pastures, as mentioned, form meal substitutes that cannot be neglected this year by the grower of swine who looks for a fai rprofit.

8. A combination of pasture or successive pastures with milk by-product and grain self-fed, is especially recommended as an ideal system. Tankage and a self-watering device are mentioned where milk is not obtainable. Cheap, home-produced feeds are thus largely supplied. The hog supplies a great part, but not all, of the labor.

THE PEA WEEVIL.

The Pea Weevil, Bruchus pisorum L., has during recent years increased to an important extent in the province of Ontario, and it is, also, now present in a few localities in the province of British Columbia. In years gone by annual losses in the province of Ontario alone due to the ravages of this insect reached a total of at least $1,000,000.

Description and Life-History

The adult insect is about one-fifth of an inch long and about one-tenth of an inch wide. In colour it is black, overlaid with patches of brownish and whitish hais, the latter giving the appearance of conspicuous spots. The ground color at the end of the body beyond the wings, appears as two black spots in a patch of whitish hairs.

The female beetles lay yellowish eggs, singly, on the outside of the forming pods. Several eggs may be laid on a single pod, in fact, it is recorded that as many as twenty eggs have been found on the pod. On hatching, in a few days, the young grub eats its way into the inside of the pod and attacks a seed. After entering the seed the insect remains therein throughout its larval and pupal states, in fact, as a generar rule, the mature beetle, also, remains in the seed until the following year. Some of the beetles, however, particularly in years of abundance, are known to leave the peas in late summer or autumn and hibernate beneath rubbish or about barns and other outbiuldings. The beetles which are planted with the seed emerge through the soil and with those that have survived hibernation beneath rubbish, etc., fly to the vines, when the pods are forming, for the purpose of laying their eggs.

Concerted Action Necessary

Owing to the fact that most of the bettles remain in the seed until the following year, the danger of introducing the insect into uninfested districts by bringing in seed from an outside infested locality is readily apparent. At the present time the infestation in the Okanagan country about Penticton and Summerland, B. C., although important is not one to cause serious alarm or to interfere in any way with the plans of the Experimental Farms Branch of the Dominion Department of Agriculture, in co-operation with the British Columbia College of Agriculture, to make the province of British Columbia an important pea seed producing centre. It is, however, of the utmost importance that farmers and others who, in 1918, will be growing peas, should keep a close watch over their crops for the appearanace of the insect in any of its stages. In the districts in British Columbia referred to, into which the Pea Weevil has recently been introduced, advice has been given by officers of the Entomological Branch, as to the non-sowing of infested seed unless the same had been fumigated, as hereinafter mentioned, to destroy weevils.

Crops of peas known to be infested in 1918 should be harvested as early as possible and the seed fumigated with bisulphide of carbon. Peas grown in community gardens or other small areas which are found to be infested should be destroyed at once, either by burning or immersion into boiling water. Such concerted action by gardeners generally and the early harvesting and fumigation of infested seed grown by farmers under acre conditions throughout the districts where the Pea Weevil is now known to occur would undoubtedly soon control the pest. It would indeed be disastrous if this destructive insect were allowed to become firmly established in districts in which pea growing is now being developed, through indifference or carlessness on the part of any grower in not co-operating in the endeavor to conrtol the weevil.

Treatment of Infected Seed

Fumigation.—The fumigation of infested seed with bisulphide of carbon is an excellent remedy. A convenient method for treating small quantities of seed is to fill an ordinary coal oil barrel, which will hold about five bushels, the quantity of bisulphide to use being one ounce to every hundred pounds of seed. The bisulphide may be poured right on the seed or placed in a shallow receptacle but care must be taken to close up the top of the barrel tightly. This is best effected with a cap made specially for the purpose, but may also be done with fine sacks laid smoothly on the top, over which boards are placed with a considerable weight on them to hold the covering down closely. The exposure should be for at least 48 hours.

Larger quantities of seed may be fumigated in tight bins, "bug houses" or other well-constructed chambers using one pound by weight of bisulphide of carborn to every one hundred bushels of seed, the exposure as above mentioned to be 48 hours. The bisulphide sould be of good quality and such as will vaporize without any residue. It may be placed in shallow dishes at the top of the bin or chamber. Bins may be made tighter by pasting paper over either the inside or the outside. Strips of felt should be fastened along the top edges where the lid fits down. The fumigation as above mentioned sould take place as soon as possible after the harvest.

The vapor if bisulphide of carbon is of course, highly inflammable and lights of all kinds must be kept away.

Holding over seed.—The Pea Weevil will not breed in dry seeds, so if seed is held over in tight bags for one year any beetles present will emerge and die. Small growers have found this an effective method of protection.

Coal oil treatment.—Coal oil has been found useful in destroying the weevils in the seeds. About half a galon of coal oil is sufficient to treat about a barrel or five bushels of peas. The idea is to thoroughly drench every seed so that the oil will penetrate and kiil the weevil. For this purpose the seed may be placed on a floor, the oil applied, and the peas shovelled over thoroughly. The shovelling should be repeated every day for at least four days, the first shovelling to b edone about two weeks before sowing.

Scalding Seed.—If when sowing, the seeds are found to contain weevils, the latter may be destroyed by immersing them in scalding water for about one minute, cooling the seeds afterwards by pouring cold water over them.

RING WORM

1. Please give me some information on ring worm. What causes the trouble? Is it infectious? What treatment?

2. What is the cause of big patches of hair comlng off the skin of cattle,

G. M.

1. Ringworm is caused by a vegetable parasite which also lives on damp walls, woidwork, etc. The dis ease is contagious. After perfectly removing crusts or scabs, paint spots twice daily with tincture of iodine. It may be necessary to saturate the parts with oil for a few days to get rid of the scabs.

2. Ringworm is present if the spots are covered with thick crusts, otherwise the trouble is alopecia arriatt, the cause of which ois not perfectly understood, nor is there a specific remedy. Oil of cajuput rubbed in two or three times a week may help.

It was estimated in 1907, after a full enquiry, that the annual average loss caused in Great Britain by each rat was $1.80, in France $1.00, and in Denmark $1.20.

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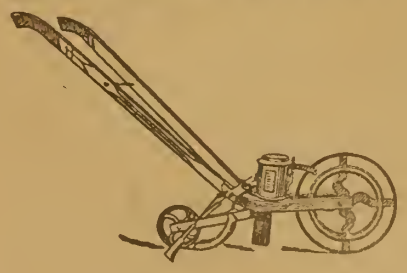

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HORTICULTURE

MULCHING THE ORCHARD

It is possible to use grasses and clover continuously in orchards as cover tops, by stimulating their growth by means of chemical fertilizers, with advantage to the trees on poor soils. On fertile soils the advantage is less apparent, but even in this case the growth of material for mulching is good economy, because the result is fully equal to that of the best methods of culture and the growing of cover crops. The possibilities of grass culture in orchards, combined with mulching, have been greatly increased and the necessity of orchard cultivation has been much lessened. There is now opened to orchardists a freer choice as to methods to be used in both the rejuvenation and the maintenance of apple orchards.

The importance of this will be seen when it is remembered that the fruit on apple trees in grass, and well mulched, is more highly colored than that produced by trees under cultivation. This fact points out one way to meet competition in the markets. Orchard mulching has decided advantages in certain particulars, but the growing of mulching material in the orchard with the aid of fertilizers is a more distinct and decided step in advance because of its greater practicability and wider application as well as tis bearing upon marketing problems.

The objection usually urged against the plan of growing mulch material in the orchard is that such a practice draws largely on the moisture content of the soil, and that the trees and fruit will suffer in consequence. So far in our work there has been no evidence in support of such a theory; for vigor and growth of trees have been all, and even more at times than are desirable, while the fruit has attained good size, perfect form, and, except where entirely hidden from the sun by the heavy foliage, of good color. The growth of grass takes place early in the season while there is an abundance of moisture in the soil, and is cut in June, after which the accumulation of decayed and decaying vegetable matter on the surface conserves the moisture and keeps the soil cool by shading it heavily from the direct rays of the sun.

Mixed Weeds to Fine Grasses

One of the most striking results of the repeated use of chemical fertilizers on the over-cropped, eroded, thin soils of the hilly sections is that the sparse, almost worthless, soil-covering of weeds and poverty grass, which almost invariably occupies abandoned orchard areas, is soon replaced by a dense growth of the better and finer grasses which thrive and increase as the seasons pass; and which annually clipped and permitted to lie on the ground, blanket the almost naked hillslopes with a covering of decayed vegetable matter. No grass seeds have been sown in bringing about this surprising change.

The secret for the amazing transformation is that, scattered among the weeds and poverty grass which nature provides to spring up and occupy land too deficient in plant food to enable the better grasses to thrive, one may find here and there, by close inspection, weak, struggling plants of timothy, redtop, blue grass and white and red clover. These plants are so small, delicate and few in number, in many cases, that a casual observer would scarcely notice them at all. Yet they are ready, when the particular elements of plant food upon which they thrive are supplied to them in generous measure, to spring promptly and vigorously into growth, and to multiply and thicken and take possession of the ground upon which they previously had been able to maintain but a feeble existence.

Under this treatment of orchard soils it is pleasing to note the ready and geenrous response of the trees in increased growth, vigor and abundant fruitfulness—a response which enables orchards occupying steep, rough, difficultly tillable land to compete successfully with orchards under annual cultivation with cover crops where tillage may be practiced with ease and satisfaction.

Nitrogen and Phosphorous Important

The application of plant food, rich in quickly available nitrogen, causes such plants as timothy, blue grass, redtop, and, in some cases, orchard grass, to spring up and take possession of the ground where before only weeds and poverty grass conspicuously existed, so that the comparatively worthless weed growth will be crowded out. However, where this marvelous development of the better grasses is promoted by the use of plant food rich in nitrogen, the occasional, barely existing, small and weak plants of red and white clover are not noticeably benefited. Indeed, in the experiments which we have had under observation, the vigorous, dense growth of the grasses which delight in an abundant supply of nitrogen has practically crowded and smothered the little clover plants out of existence.

On the other hand, where phosphorus in the form of acid phosphate is used alone or in combination with muriate of potash. there is but slight beneficial ffeect on the grasses; but the small, scattering clover plants soon begin to increase noticeably in size, spread or multiply, and gradually take possession of the soil.

The annual application of 350 pounds of acid phosphate has been the means of sccuring the prolific clover development on the plots treated with this chemical, either alone or combined with potash; yet when a weight of nitrate of soda equal to that of the acid phosphate was added, it complete-

What CP Means to the Man who is Hesitating.

Have you been trying to decide whether or not to Paint, this spring?

You know the House needs Painting; yet perhaps you feel that you ought to save the money.

Frankly, you won't be saving anything—but you will risk losing a big part of what you have invested in the house.

C. P. Paint Protection is true conservation—because it guards your buildings against the destructive effects of climate and weather.

The money laid out for CANADA PAINT conserves the much larger amount already put into a house, barn, garage or other property.

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THE CANADA PAINT CO. LIMITED,
Makers of the famous "ELEPHANT BRAND" White Lead.
572 William Street, Montreal. 112 Sutherland Ave., Winnipeg.
8

GROW STRAWBERRIES

In the rush of other work, do not forget to set that new bed of strawberries this spring. Many growers are cutting down their acreage on account of labor difficulties and the high price of other crops. Production for the next few years will be cut in two and berry prices are sure to be high. Our advice to our fellow Fruit Growers is, grow all the grain you can, but DON'T GIVE UP THE STRAWBERRY. Among other varieties we recommend Senator Dunlap and Warfield at $4.00; Sample, Arnout, Buster and Glen Mary at $5.00; Wm. Belt, Dr. Burrell, and Bubach at $6.00 a thousand. The great everbearer, Progressive at $1.25 a hundred. Send a card for our free Catalogue.

CYRUS & MANNING ELLS, Port Williams, N. S.

ly overbalanced, by the production of grasses, the effect of acid phosphate which nourishes and encourages the clover.

THE DIETIC VALUE OF FRUIT

(By Mrs. Alex. Cuppage)

The fruit eating person is generally a good natured person. Not only does t he eating of fruit tend to perfect digestion, but it stimulatets the production of high-class fruits in all parts of the country. It was only a few years ago that a banana was a stranger to most of our people, while now it is regarded as almost a necessity. The Woman's Institutes of Ontario, of which the writer of this article is a valued member, will do well to call the attention of hotels, public institutions, as well as private households, to the importance of fruit dishes in the daily menu, as well as to the better preparation of these.—Editor.

Fruits in some form should constitute an essential part of our every day diet, for the following reasons:

(1) Because they taste good and we like them. I place this reason that can be given.

Everyone in a normal condition enjoys fruit, and the natural appetite is a true guide to the needs of the body. Hunger and thirst are sensations wisely given, and when not abused direct us in the path of health. That is to say, happy living for good health is not only wealth, but happiness also. If one has a good constitution, and is temperate in his or her habits and leads a clean, pure and wholesome life, his or her appetite is a good guide that may be implicitly trusted. Under such conditions we all like fruit, and should eat it in the serene confidence that the thing you like in the way of food, is the thing you need most.

In satisfying our natural appetite for fruit we use such fruits as are well matured, juicy, and fine flavored, we reach the hghest form of palate, or taste a real pleasure with the best possible digestive effort.

(2) Because they help to keep our bodies in a good condition. Our ordinary fruits contain the following substances or compounds in greater or less proportions:—water, sugar, acids, oils an ethers, proticol, pectose, cellulosc, or vegetable fibre, and ash or mineral salts. These substances are all essential constituents of a perfect and well rounded diet for our bodies.

While the actual nutrient value of fruit is not high, its dietic value is very great.

The two qualities which most serve to render fruit wholesome are their acid juciness and flavor. The juice is largely water but it contains the sugar and acid of the fruit, and if these are present in large quantities and in the right proportions, the fruit juice is agreeable and refreshing. Flavor also adds to the quality of the fruit. The flavor of fruit is due in part to the acids and sugar they contain, but more largely to the volatile acids and ethers.

Fruit acids and others, when taken into the body have a tendency to lower the temperature of the blood, and thus correct or allay any slight feverishness that may exist.

They also tend to keep the organs of secretion like the liver and kidneys, normally active.

The pectose and cellulose of fruit correct a tendency to constipation and signally aid in keeping the whole digestive tract in an open and healthy condition.

Again, if children were given free access to fruits, I think there would be less indigestion or bowel troubles. For after a child is two and a half years old stewed fruits should be freely used especially apples, prunes, figs and peaches. For many children all ripe fruits are a laxative; and for this reason alone, if for no other, they are valuable aids in regulating a diet that is frequently much too starchy, keeping a child dull, sluggish and very unhappy.

The sub-acids of fruit are highly antiseptic to our bodies, and tend to prevent disease germs from finding a lodgment, and developing in our systems. As to what kinds of fruit, or how much to eat, there is only this answer. Eat the kind of fruits you like, and can best afford, and eat just as much as your conscience and good judgment will allow you.

When to eat fruit is a less personal question, and the following general advice may be of service.

The fruit should be eaten when you eat other food. Although fruit is easily digested, it is not wise

to be constantly and frequently putting into our stomach food of any sort. By this practice the strongest stomach may be ruined and refuse to take the best food.

b. When fruit is eaten before breakfast, say an apple or an orange, its cooling and laxative effect is likely to be at its maximum.

c. Fruit is an excellent thing to be taken with the mid-day lunch. One or two slices of bread taken with an apple, is better than three with out an apple.

d. Fruit of any sort eaten after dinner adds largely to the pleasure of the palate, while adding little to the tax upon the digestive organs which are more likely to be overtaxed when there is no fruit in view.

e. If it is ever desirable to partake of a late supper, it is well to remember that an apple, a pear, a peach, or an orange, some plums or a bunch of grapes, will be less likely to haunt our late slumbers than oysters, meat salad, ice cream, potato salad, rich cake, pies, and other sweetmeats.

Mahone Bay, N. S., 1918.

Mr. R. U. A. Landsman,
Prosper Hill.

Dear sir:—

Answering your valued inquiry for information re potato spraying outfit, beg to say that the pump is all brass, for the reason that the liquid will rust the inside of anay pump having an iron air chamber or iron pipes touching the spray. This rust, breaking loose, pumps into nozzle and clogs them. The piston of the pump is packed with a special fibre packing, made in such a way that it can be kept tight for years and new packings cost but little. The relief valve at the base of the air charmber permits pumping the liquid back into the cask, thus with the agitator and the returned liquid the mixture is quickly brought to a uniform strength. This valve will also drain the pump when you are through spraying.

The four row potato spraying attachment has a strongly built iron frame. The mixture is conducted to the nozzles through hose and brass pipes. The spray boom can be folded for passing through a gateway, or packing away when not in use. The nozzles can be adjusted for width of row and instantly for height and angle of spray. Four nozzles follow the tops of the rows and six intermediate nozzles spray the sides of the vines. The stop cock is just at the hand of the opeartor so that the spray can be shut off instantly. This apparatus can be attached to any cart or wagon, and one man can operate the sprayer as well as drive. This attachment can be used with any pump of sufficient capcity. These outfits have been known to run for several seasons without the nozzle once clogging. The straining hopper with brass wire cloth tacked in on an angle cleans the liquid when it is upt into the cask. The buttons permit of the quick removal of the pump from the cask.

The tree spraying attachment of hose, bamboo rod, double nozzle, etc., makes this sprayer into an orchard outfit. With these fine features and many others you see they are well named the "Perfect" spray pumps.

Trusting to be favored with your valued order,

Yours very truly,
R. B. WESTHAVER.

For the potato crop use, if possible, a clover sod that has been manured (if necessary) the previous season; manure applied the year of planting favors the development of scab.

FRUIT PACKAGES

The fruit season is again drawing near, how about your boxes and crates for the coming season To pack and ship to the best markets, you require the best standard packages, which can be had by placing yopr orders early with the

Hantsport Fruit Basket Co'y.

HANTSPORT, N. S.

Speedy Haying and Finest Hay

GOOD hay is made in fast time with little help, year after year, on farms equipped with **McCormick** mowers, rakes, and tedders, and **International** side delivery rakes, loaders, etc.

McCormick Mowers, Dump Rakes, and **Tedders** have been too long and favorably known wherever hay is grown, to need description.

Every hay grower should become familiar with the construction of the new **International Combined Side Delivery Rake** and **Tedder.** This popular, economical machine has two duties in one—it can be instantly adjusted for rake or for tedder. It rakes clean, teds thoroughly, and handles hay gently. It is a left-hand-delivery rake, which means it can follow the mower closely and strike the heads first (not the stems). It does clean work, piling two swaths at once on the clean stubble (not on an unraked swath), for proper curing.

International Windrow Loaders are built to last. Pulled easily by two horses, they load uniformly, leave the field clean, lift hay over 10 feet, do not thresh off blossoms and leaves.

Hay values are high. **McCormick** and **International** hay tools, which put hay under cover in prime condition four or five hours after cutting, return their price, and more, to your pocket. Act early this year! The demand for machines exceeds the supply! Write the nearest branch.

International Harvester Company of Canada, Limited

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WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

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Do You Own a Factory?

IF YOUR buildings have steep roofs, cover them with Barrett's Everlastic "Rubber" Roofing.

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Don't take chances on poor roofing. Even a small defect may cause much damage. Barrett Roofings are good all over.

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Ad. No. 3.

DAIRYIN.G

COW FRESHENING IN FALL WILL PRODUCE MORE MILK SAYS WELL KNOWN DAIRYMAN

To the experienced dairyman, the work of late winter is the most dreaded of all the year. Then it is that the breeding season comes on. especially if a late fall or early winter calf crop is expected. Likewise. the subject of pastures is one that forces itself to the front as the cattle have been kept up all winter and are anxious to plant their feet on terra firma once again. This year the increasing costs of grain rations for the cows make it necessary for the dairyman to go carefully over his inventory of ideas to discover if there is any feasible way to diminish the quantity of grains that seem to be so necessary to the maintenance of a creditable milk flow. Moreover, he who sees a few inches further than the end of his nose will be thinking about the mldsummer season of short pasture and will be planning on crops which may be put in to supplement these pastures and the idle animals over until fall pastrue comes on in abundance.

Fall or Spring Calves

The spring calf is the one most commonly met. Despite this fact, his brother born in the fall has the better of him in many different respects. While it is well nigh impossible to have all the cows freshen in the fall, it is certainly desirable from many viewpoints. It has been proven long since that the cow freshening in the fall will produce from one-fourth to one-fifth more milk than the same cow freshening in the spring. And why shouldn't she? While the calf is still young the mother secretes the milk copiously. and this, taken together with the silage keep up the flow all winter. Spring. with the attedant green grass further stimulates the dairy matron. Thus there is constant and continuous urge until the period of short pastures. Then while the owner is busy making hay, plowing corn and harvesting grain, the cow kindly desists from milk giving and allows her owner to enjoy the balmy breezes of a midsummer evening in preference to sweltering in the torrid heat radiating from a cow with a full stomach, a distended udder and a turbulent, fly-tossed tail.

Moreover, the cows that freshen in the spring add insult to injury by giving milk most copiously just at a time when the pricie of milk. butter and their derivatives are lowest in price. The fact that the cows gave most thorugh fall freshening and that this product is worth much more during the winter are reasons sufficient to make any selfrespecting dairyman change the old order of things.

But that is not all. I find that fall calves can be raised much more easily than spring calves. The calf pails are easily kept sweet. there is more time to fuss with the young bovines and so. all the way around, the youngsters soon get to eating hay and grain—they grow and thrive and spring finds them ready to go on pasture without fear of scours. Lice are to be feared, especially is the calves are kept in a dark place. Not that the dark place brings the lice into being but in such an environment they develop more rapidly and are harder to get rid of. I have used several of the advertised loues powders and any of them do the business.

The late winter is the time to plan on setting all the cows back so that in two years, all of them will calve in the fall. While the usual thing is for the cow to reproduce every twelve months, my observation is that absolutely no harm results from the reproductive process being repeated every ten months for two years if the cows are well fed. When I say well fed. I don't mean running about the straw stack. I refer to a bushel basket full of silage morning and night. a liberal hay feed at noon and a six to eight pound daily grain supplement. Under this feeding. cows show no ill effects of more frequent reproduction. While not advocating this as a general practice, to have the animals bearing their young in the fall will greatly overbalance any loss of milk the owner might suffer through this practice carried on for two years.

Let Pasture Get Good Start

After the long, cold winter with its many attendant dark days in many stables, the cattle will be anxious to get their feet on the ground. Ordinary springs, the temptation is keen to let the cows onto the pasture as soon as they look green; this spring the temptation will be much keener. The man who. in a fit of economy. opens the gate to the pasture before it is able to carry the load is lost. He will immediately curtail his milk production. the pasture will be irreparably damaged with nothnig of value to show for it. Grass may be green without being nourishing; also cattle may eat it with avidity even though it lacks body.

As a long established fact, the early grass is neither nourishing nor satisfying. While it will stimulate a greater flow of milk for a few days, the stimulation is of a temporary nature and is not founded upon any added nourishment which the cows get by virtue of the green, washy grass they consume. Then one should not lose sight of the fact that the grass blades are the lungs and stomach of the plant. In other words, unless the leaves get an opportunity for expansion and development. they fail in their function of combining the carbon dioxide of the atmosphere with the water of the plant to form the carbohydrates which are so valuable in feeding. If there was no other suitable reason, this one would be sufficient since the leaves are like the start which a man makes on a savings acocunt. Destroy the start at starting and the acocunt is worthless—let the start run awihle and the acocunt be comes a source of satisfaction and a fund forever. In the same way the leaves must be allowed to get some plant plant food manufactured before the supply can be legitimately drawn upon.

Many pastures are ruined each year through being perforated by the stock in the early spring. In such cases. the plant roots are crushed and they cease to function normally until well along in the season. A herd of cattle in a wet pasture for a single day can ruin the prospects for two weeks' feeding a little later on.

Late Summer Soiling Crops

Abundant feed for a while and then a scarcity of feed will not suffice to keep a dairy cow at her maximum production. If at all posible, the suply of pasture should be at all times kept ample for the animals that must go to grass each day. And so it becomes the part of good dairy, long distance wisdom to plan now on that portion of the late summer which is ordinarily one of extermely short pastures and what there are is of extremely poor quality. Commonly, the last two weeks in July and the first two in August see a dearth of good pastures. It is necessary to grow something to bridg eover the gap between the abundant pastures of early summer and those of early autumn.

While not generally in favor of soiling crops for the dairy cows, nevertheless a soiling crop it must be since there is no feasible combination which will insure pasture at this time under the conditoins which usually rule. True. some years oats. planted about the first of June make good supplementary pasture. but two weeks of dry weather in June puts all this at naught. More dependable thana this combination, however, is one of oats and cow peas planted together about June 1. I have seen this combination in use several times and ordinarily it fills the bill.

Wilted alfalfa hay is an A No. 1 supplenmentary soiling crop and it is found on too few farms today.

I. J. MATTHEWS.

NO CLEAN MILK CAN COME FROM AN UNCLEAN PAIL

Often the separator and strainer are painstakingly washed and scalded while the milk pails are washed with a cloth and rinsed in water in which the separator is sterilized. Indeed the housewife would be indignant should some one intimate her milk pails are unclean. It is a fact nevertheless that pails thus washed are simply dirty and the dirt is visible to the naked eye in the seams of such pails.

Unless close atention is paid at

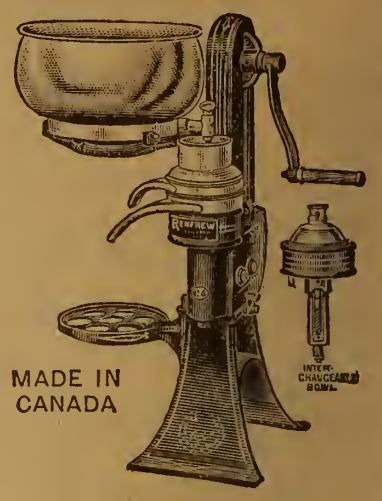
Butter Prices Will Be Maintained

THE Food Controller for Canada states: "I do not expect that the sale of oleomargarine will result in any reduction in the price of butter. The overseas demand is practically unlimited --- For years after the war Europe will require all the butter which Canada can produce for export, and the prices are certain to be high."

High prices for butter make every pound of butter-fat saved a source of extra profit that is a revelation to many farmers and dairymen. The

Renfrew

saves you about one half-pound of valuable butter-fat, per cow, per week, over other machines, even if they are in running condition, and much more if they are not running properly. Multiply this half pound by the number of cows in *your* herd and then calculate what this means to *you* in dollars and cents per year. Will it pay you to continue losing money by using an ordinary machine? The Renfrew gets all but the last three ounces of butter-fat in a ton of milk skimmed.



MADE IN CANADA

Which would you rather sell at present prices?
10 Gallons of good firm butter-fat from the Renfrew which gets all but 1-10 pound in every 1,000 lbs. skimmed.
or
7 Gallons butter fat from other machines which lose a whole pound in 1,000 lbs. of milk skimmed.

Besides quantity, the Renfrew gets *quality*, Good first-class cream means globulcs of fat unbroken, and bettcr, firmer butter. This high quality of cream is secured by the exclusivc curved wing centre-piece of the Renfrew, which distributes the milk to the discs in thin sheets, and prevents the slapping of milk and breaking up of the fat globules, which occurs with the ordinary straight wing machines.

Our illustrated booklet gives Government Dairy Schools proofs of the close skimming. Also read about thc Renfrew's exclusive interchangeable-capacity feature, self-oiling system and many other modern advantages. Write for booklet today.

NOTICE.—The Renfrew Separator illustrated here was formerly sold under the name "Standard," which identified it as a high efficiency cream separator. The name "Renfrew" has been used on the same machine for several years for our United States and foreign trade and under that name has become as popular in those markets as under the name "Standard" in Canada. Now the name "Renfrew" has been adopted for Canada so as to link the name more closely with that of our company and so that we can sell the machine under a uniform name throughout the world.

The Renfrew Machinery Co., Ltd.

Head Office and Works: Renfrew, Ontario

Eastern Branch: Sussex, N.B. Agencies almost everywhere in Canada

Our Other Lines: Renfrew Kerosene Engine, Happy Farmer Tractors, Farmers 2,000 lb. Truck Scale, Wood Saws, Grain Grinders.

13

Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED

251

time of washing the soured milk that remains in the seams and other lodging places bout the pails is not noticed. Close inspection will often reveal insanitary milk pails. Cleanliness is the one thing that makes quality in the dairy product in any form, whole milk, cream or butter.

An unclean milk pail will have a deteriorating effect upon quality more than any utensil. for the time the milk remains in the pails its temperature is such that it readily absorbs filth and odors—it is really a nideal seed bed for germs.

Much time and labor can be saved in washing if care is exercised in purchasing pails with smooth surfaces with no unnecessary crevices to harbor milk or any foreign substances We usually wash four milk pails. On three o fthem we have to use a darning needle. nut pick or some such tool to remove the milk from the rim at the top, on the outside, while the other one is soldered down so smooth that it needs na extra attention.

Another thing, there is quite a difference in time required to wash the ears that fasten the handles on milk pails. A milk pail can not be thoroughly washed with a cloth; never touch the milk pail with the dish rag but have a special dairy cloth. The best material for this purpose is a large square of mosquito netting as it is so easily kept clean. A vegetable is so easily kept clean. A vegetable brush is excellent for washing milk pails and if a nut pick is used in the crevices there will be no dried or sour milk left to contaminate the new milk.

Not only is the quality of the dairy product increaed by thorough washing but the life of th epails is prolonged. Usually the pails commence to rust in the seams and bottom because they they are not thoroughly dried. There will soon be a leak in the rust spots, when there is no reason why they should wear out or break sooner than other parts of the pails.

To keep the pails in the best possible condition, wash imediately after milking before the milk dries. First First rinse with cold or luke warm water ,then wash in hot water, using some cleaning agent and plenty of "elbow grease." The creamery company to whom we sell urges its patrons to use no soap on dairy utensils. Rinse with boiling water and then invert each pail over a kettle of boiling water for a few minutes. The steam sterilizes the pail and the heat dries the surface without further attention. There will be no rusty pails from dampness when this process is practiced. If your milk pail is not thoroughly washed it may contaminate the milk more than all the dirt that falls into an open pail.

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AT FACTORY PRICES

WE ARE THE LARGEST DISTRIBUTORS OF READY ROOFING IN CANADA. WE SELL DIRECT TO USERS. WE CAN SAVE YOU MONEY. WRITE FOR FREE SAMPLES.

THE HALLIDAY COMPANY LIMITED HAMILTON
FACTORY DISTRIBUTORS CANADA

FAMILY RECORDS IN THE SALE RING

The dairy business has become a much more complicated financial proposition than it was in its earlier state, and there is now much more oportunity for financial loss than when the labor of the farmer was the only item at stake. The business has grown up gradually to this condition, and many farmers have not changed their methods to meet it. They may have increased the number of cows on their farms, and purchased larger amounts of grain to feed them, but the question of profitable dairying is not solved by the number of cows kept. It must come through the larger production of the individual cow. Every dairy has some good cows, so to improve the herd the owner must eliminate the cow that has not the ability to produce enougt to pay for her keep and breed from the good ones, using a full blooded sire from a good producing family to head the herd. Look back and see the family record of the sire, whether he is from a roducing family or not.

DEVELOPMENT OF PURE BREEDING

The purpose of pure breeding is the improvement of grade herds, says Dr. Hubert Work. All cattle are scrubs unless they have a pure bred sire or dam; then they become grades, and it necessarily follows that the greater number of pure bred crosses the higher the grade.

It is posible through the use of pure bred sires to practically breed out the 50 per cent. of blood imported to the offspring of the first cross, but it will never be possible to register as pure bred such a descendant no matter how far removed, because it is not possible to fix a starting point.

For practical dairy purposes a cow with three, four or more pure bred crosses is nearly as productive as a pure bred, providing the very best sires have been used, and can be procured at much less cost, but the strain of scrub blood remaining is always an element of uncertainty in determining the value of progeny.

The more uncertain the breeding of a dairy herd, the more important it is to cross with a pure sire of outstanding merit.

No dairy man who saves his heifer calves can afford to use other than a pure bred sire, otherwise his cows will always be scrubs and their production limited. The butterfat content of milk must be bred into cattle, it cannot be fed into them.

WORTH CONSIDERATION

Perhaps some of your cows gave twenty-five pounds of milk yesterday, and some gave twenty-two; the difference of three pounds in the day, a pound and a half in the milking might easily be overlooked. In fact the smaller quantity might appear the larger on account of more foam on top, and might easily pass as the larger mess if not weighted.

But a pound and a half aa a milking may amount in a lactation period to a thousand pounds and that is worth consideration.

In the plan of the cow testing advocated by the Dairy Division, Ottawa, no man could be a thousand pounds astray in his judgment between two cows, for he would have the weight given by each cow jotted down at the time. Some men weigh three days per month, many prefer to weight daily, it is better; the two different printed forms are available for free distribution, write today and get them, stating which you prefer, the daily or three day form.

A thousand pounds of milk, worth say twenty dollars may affect your decision in selling or keeping a cow. The good herd that you have in your mind's eye can be built up by giving each producer due credit. Don't sell a good cow not knowing her real value and so sacrifice twenty dollars worth of milk for the sake of a one dollar scale.

72 page catalog mailed upon request

Eight Good Reasons Why You Should Buy a

DE LAVAL
CREAM SEPARATOR

GREATER CAPACITY: New capacities have been increased 10%, without increase of speed or effort required in operation.

SKIMS CLOSER: The improved bowl design, together with the patented milk distributor, gives greater skimming efficiency.

EASIER TO WASH: Simpler bowl construction and discs caulked only on the upper side make the bowl easier to wash.

EASIER TO TURN: The low speed of the De Laval bowl, the short crank, its unusually large capacity for the size and weight of the bowl, and its automatic oiling throughout, make it the easiest to turn and least tiring to the operator.

THE MAJORITY CHOICE: More De Lavals are sold every year than all other makes of separators combined. More than 2,325,000 are in daily use—thousands of them for 15 or 20 years.

TIME TESTED: The De Laval was the first cream separator. It has stood the test of time and maintained its original success and leadership for 40 years the world over.

EQUIPPED WITH SPEED INDICATOR: Every New De Laval is equipped with a Bell Speed-Indicator, the "Warning Signal" which insures proper speed, full capacity, thorough separation and uniform cream at all times.

SERVICE WHEN YOU NEED IT: The world-wide De Laval organization, with agents and representatives ready to serve users in almost every locality where cows are milked, insures the buyer of a De Laval quick and efficient service whenever he needs it.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

THE DE LAVAL COMPANY, Ltd.

LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA.
Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butter-Workers. Catalogues of any of our lines mailed upon request.

MONTREAL PETERBORO WINNIPEG VANCOUVER
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

Just Ahead

The road to yesterday—why travel it?
A tangled skein—so why unravel it?
The future calls you on, the past is dead,
All, all you hope to do lies just ahead.

LIVE STOCK.

HOG FARMING

Frequently we get requests for information about piggeries that will accommodate large numbers of brood sows or feeding swine, and in some instances plans are desired for buildings that will house all kinds from sucking pigs up to breeding fattening aniimals. Swine raising should be a profitable enterprise when carried on in conjunction with dairying or some other line which provides considerable by-products acceptable to pigs, but it should be remembered that housing is an expensive factor and not the only factor which should enter into the calculation.

For a large proposition one should consider available land and pasture. Originally the hog was a foraging animal and when the farmer allots a certain area to a definite number of pigs, and does not think only of pen room, he is more likely to succeed. The housing of large numbers in buildings is inviting trouble, especially with breednig stock. Furthermore, very young pigs do not thrive so well in the enclosure with feeding hogs, and separate accommodation should be provided for both.

It would be very easy to go to excess in constructing expensive piggeries. Of course, feeding pigs would not do well where the temperature goes very low in winter, but in the damp, poorly ventilated house, though warm, is just as bad or worse than a cold, dry house. The dry, well-ventilated building, moderately warm, is ideal for all kinds of swine, and such can often be built at reasonable cost from material at hand, or by putting a cement floor, glass and a ventilating system in some old outbuilding. For summer there is no better method of housing either feeding or breeding stock than in the colony, or portable house. Up to a couple of years ago very comfortable and convenient rectangular houses could be built for twenty dollars, counting labor and material. The price of lumber has advanced and the value of labor has increased somewhat, but on n ordinary farm almost enough material could be picked up around the place to make one or two houses.

In summer swine raisers should make extensive use of pasture, not only on account of the economical gains thus made, but to maintain the health and vigor of the land. Breeding stock, particularly, should have access to the soil, and shoats give considerable response to forage crops when receiving a grain ration in addition. Some pertinent advice is contained in Bulletin 95, of the Missouri Experiment Station. Three general conclusions from this Bulletin bear on this question:

1. "The number of hogs which may be kept on each acre of forage will depend upon the abundance of forage, but in general not more than 10 to 12 head should be used."

2. "The greatest returns have been obtained when grain was fed in addition to the forage at the rate of 2 to 3 per cent. of the weight of the hogs per dey. The amount fed per head per day should be increased as the hog increases in size."

3. A very good plan in feeding 80 to 100-pound hogs on forage would be to feed per head per day, durng May, 1.75 pounds of grain; during June, 2 pounds grain; duriny July, 3 pounds grain; and durinb August, 4 to 5 pounds grain.

The same bulletin says: "The gains made on forage are made at 20 to 30 per cent. loss cost than gains produced with grain and dry-lot feeding." In a trial with alfalfa, with grain fed additionally, it was found that 596.8 pounds of pork could be accredited to each acre.

In a test with red clover, 572.2 pounds of pork were accredited to each acre of forage eaten, and in a field of rape, oats and clover, 394 pounds of pork were accredited to each acre of forage eaten.

At the Ontario Agricultural College it has been pretty well demonstrated by experiment that it is unwise to tur nhogs to pasture until they weigh in the vicinity of 100 pounds. However, brooding sows sould be out when there is grass, and a proper system of supplying forage will induce largely the types of buildings constructed and amount of indoor accommodation provided.

HALF OUR BULLS ARE GRADES

That in 35 dairy districts of Canada with 5,620 bulls in use, 47% of these are grades was the surprising statement of C. F. Whitley in discussing cow testing. He went farther, and said that out of the remaining 53% one-third are poor and undesirable animals.

We are coming to pure breds in horses, but the question in its relation to cattle is ignored.

Breeding, it was also pointed out is not all, however. Mr. Whitley told that at a recent auction sale two herds of equally well bred cows were put up; one lot, with no record, averaged $145.00; the other lot, with records, fetched an average price of $303.00, more than twice as much.

The point is, that by the use of a scale and Babcock tester the true value of a dairy cow can only be learned. "Just recently," he said, "$1,000 was offered for a fine prepotent sire whose worth was undiscovered till he was simmered down for beef extract. One of our recorders kept track of the performance of daughters of two pure bred sires of the same breed in one small district and found a difference of almost $600 in the value of the butter in one year. Let us save those good sires.

"When total income from any herd, or any one cow is only at a medium level, unless expenses are remarkably low, the resulting profit cannot be in keeping with th just deserts of the modern dairyman. If a cow's total product of fat is worth seventy dollars and her feed is valued at sixty-five, does the clear five dollars pay? We naturally say that so and so has a "good" business, or that this is a paying investment as the interest or net profit is high. The large turnover, either with matches, mops, or milk does not necessarily mean a paying business, often the growing expenses quickly devour income leaving a bare skeleton of profit. If you prefer to think in large figures you may recall that the newspapers recently stated the G. T. R. in a certain period had four million dollars more as gross receipts, but the net earnings were three million dollars less.

Are we at present on an economically sound basis when we still harbour the poor cow? It has been stated authoritatively that many industries do not realize twenty per cent. of their possible capacity; can we "speed up" milk production? I firmly believe we can. Canada has a heavy debt: but the wonderful dairy cow selected, can be relied upon to assist in its liquidation.

Note where men are keeping track of weights and tests and you find their cows are head and shoulders above the average yields of the township or county, twenty-five dollars or more per cow. Where records are kept the herd shows improvement, where the farm and the cows have a poor appearance it is probable the owner is not weighing and sampling; but where the scale is used and the record sheet is studied, there you find the milk yield per cow steadily climbing, four thousand pounds one year soon made six thousand, the one hundred and fifty pounds of fat made into two hundred and fifty; elsewhere you note the yield is up to the eight and nine thousand pound level, or may be the figures are in the fourteen and fifteen thousand pound class, (I am quoting actual records) and three and four hundred pounds of fat per cow, with one hundred dollars or more clear profit per cow above feed cost, and a return of two dollars and a quarter for every dollar spent for feed.

REMOVING THE BOAR'S TUSKS

As a measure of reasonable precaution the tusks should be removed from all breeding boars. Most people harbor an impression that this is a very difficult thing to do, whereas the truth is that it is neither difficult nor dangerous.

Take a strong rope, three-quarters of an inch in diameter, and in one end of it make an eye splice for a running noose.

Empire Users Say

What better arguments could be offered than the practical experience of other farmers and dairymen who have had to solve the same problems as those now confronting you?

The labor shortage is increasing and the demands for greater production of farm products are more insistent than ever. Prices are high, and opportunities for increasing your income have never been better than those afforded at the present moment. Cows mean money in dairy products, and are also a source of rapid increase in the productive qualities of your land.

Don't sell your cows because you can't get labor to milk them. Profit by the experience of men who have solved the milking problem. Mr. W. T. Ellis, the well known dairyman of Billing's Bridge, says, about the

EMPIRE MILKING MACHINES

"Owing to scarcity of labour I wasl forced to instal a mechanical milker. I had studied the milkers carefully for about three years and last June I decided on the Empire, and I wish to say to my brother dairymen that the Empire, so far, has done everything that it was represented to do, and I do not know any dairyman who has an Empire and is not satisfied with it. I have never had the slightest trouble with either the milker or the engine. I milk, on an average, about thirty cows the year round, have two double units, and a two and a half (2½) H. P. engine. We have had no udder trouble or sore teats since we have used the milker. It will milk a cow equally well when she is in full flow, or when she is being dried off.

I know of two dairymen who have taken out other milkers and installed an Empire, with good success, and if I was buying to-morrow, I would certainly buy an Empire."

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THE BREED FOR FARM OR RANCH

DOMINION SHORTHORN BREEDERS' ASSOCIATION

W. A. DRYDEN, Pres., Brooklin, Ont. G. E. DAY, Sec., Guelph, Ont.

Slip the noose over the upper jaw and work it back of the tusks. Snub the rope to a post. The boar after a moment will cease struggling and will merely pull back, thus holding himself. Slip a bar of iron into his mouth, and have the assistant press it firmly against the tusks of the lower jaw while the operator with a cold chisel and hammer removes the tusks. It is surprising what a ight blow is required to remove a tusk in this matter. It will snap off as easily and as smoothly as a piece of glass. A crowbar is useful for this work, as the lower end is usually of square iron. However, a piece of old buggy axle or an old plowshare will do.

I have seen attempts to saw the tusks. This is not only dangerous but is unnecessarily cruel for the hog. A bolt-cutter is sometimes used, but this is a cumbersome method. Never use a wire device to hold a heavy hog, as the jaw will surely be severely lacerated, and often permanent injury will result. The tusks of the upper jaw need no attention, as they are of no use to the animal as a means of injuring other animals. H. T. M.

TURNING THE COWS TO GRASS SHOULD BE DONE GRADUALLY

The early young grass contains a large amount of water and when the cows are turned onto it before they can get a full bite they have to consume a considerable quantity in order that they may receive sufficient food nutrients to sustain the body and accomplish the regular amount of work in the form of producing milk and butter fat.

Not only is too much of the "washy" grass injurious to the animals, but the pastures are kept cropped sort and never supply the amount of feed througt the season that they would have had the grass been given a chance to get a good start before the cows were turned onto it. The effect of young soft grass is not noticed on young stock but is plainly shown by the cow giving milk. At first the milk flow is slightly decreased but as she becomes accustomed to her new ration and the grass becomes more mature a favorable influence is exerted upon both the quantity and quality of the milk.

When the cows have an opportunity of consuming a large quantity of grass with but little exertion they obtain a ration equal in nutritive value to the dry feeds. The fresh grass is also more digestible than dry hay or concentrates. Fresh grass is also -mfwm centrates. Fresh grass contains a higher percentage of protein than older gras. Analysis of red clover cut at certain dates show that the amount of proteini and mineral substance is greatest in the young plant but gradually decreases and carbonhydrates and fibre increase as the plant matures. This points to the fact that feeds to supplement new grass should be of a carbonaceous nature in order to balance the ration. But as the summer advances and pastures become dry, feeds that will bolster up the protein side are necessary.

Grass should be allowed to attain a height of from 4 to 6 iniches before the cows are turned ont oit. Then a sufficient start will have been gained so that throughout the season, unless too many animals are kept on to, an abundance of feed will be furnished. When grass is 6 inches high sufficient nutriment is stored in it so that the cow is enabled during her grazing hours to obtain a volume of feed large enough that it furnishes nutrients out of which the cow can make milk and butter fat in abundance with ease. The change from the comparatively dry feed of winter to the succulent grass is a radical one, and in feeding dairy cows we should never make a radical change suddenly. It is therefore important to gradually accustom the cows to grass.

The early fresh grass acts as a tonic and a stimulat to the cow and by gradually accustoming her to it her body is protected and she will retain throughout the season much of the stamina and energy stored up from expensive winter rations. A good plan is to let the cows go to pasture about two hours the first day, about three hous the second day, four hours the third day and thus changing gradually from winter to summer feeds. In like manner the winter ration is decreased slowly and regularly so that the increase in milk flow which follows will be permanent rather than temporary.

THE LOVELINESS OF THE MUSQUODOBOIT VALLEY

C. G. R. Booklet on the Beautiful District Traversed by Rail and "The Chosen Waters."

The lovely Musquodoboit Valley, whose charm is less familiar to Nova Scotians generally than it deserves to be, is coming into its own, largely by means of the Canadian Government Railways. The first folder to herald the delights in store for summer travellers who take the trip lies on the editorial desk of The Herald. It is a folder upon whose cover of dark green is a dash of vivid warm scarlet—a scarlet map of our sea girt province, instantly arresting. It is, as to its exterior, the sort of folder which you would be sure to pick up wherever you saw it, and enfolded between the scarlet and green is description of all pleasures in store for the traveller to "the Musquodoboits." At last, in spite of its isolation, the fair place of "the chosen waters" as its Indian name signifies, has been found out. Its gem-like beauty spots are disclosed by an appreciative pen to the travelling public—those hundreds who in their summering seek the refreshments of natural God-made beauty and the repose of the gracious haunts which can only be found off the beaten track.

Here what infinite refreshment, what a feast for eyes and spirit and body awaits all comers. To a fortunate few of us it is well known and dearly loved. It is good to know that the C. G. R. has recognized what a wonderful asset it is, and has honored all this unaggressive perfect beauty with its own special folder. There are fine pictures which are to the written descriptions of scenery and air and the life of the valley what italics are or black faced type—but which more effectively emphasize than either. Petpeswisk harbor smiles up at the reader—still, serene, exquisitely contrasting with the strenuousness and noises and complex life of city streets—dusty city streets of concrete glaring whitely under hot midsummer suns. There is Martinique Beach, Fathom Harbor, Seaforth—all suggest holiday times when nature in the valley sings with a voice irresistible and full of the spirit of companionship:

"Let us take leave of haste awhile
And loiter well content."

—Halifax Herald.

BACKYARD BACON

An increase of 25 to 30 per cent. in the number of hogs in 1918 as compared with 1917 may be confidently expected, the Dominion Live Stock Commission reports. This is a splendid response to the general appeal made to farmers to keep and breed extra sows, and to the conference held during 1917 to further increase bacon production.

The farmers of Canada took this first sstep towards increased bacon production in the face of an acute feed situation. Many of them knew that they would not have enough feed to properly fatten all of their extra young pigs. These pigs must be fed and cared for, and many householders in Canada could help by keeping one or two pigs, which could be bought at weaning time, and fed during the summer, mainly on kitchen and garden refuse. In the autumn, the meal ration could be increased for the purpose of properly ftatening the pigs for killing.

There are thousands of people around small towns, villages and settlements, at cross-roads and elsewhere, who could and should help in this matter. Do not allow kitchen refuse or garden weeds and waste to go unused. It is much more sanitary to have a pig, properly kept in a pen, away from the house, than to allow a dof the freedom of the house after he has been "investigating" your neighbors' garbage. Here is an opportunity of service without sacrifice. It is past the time for doing our "bit"—it is now time to do our "best" Get a place ready to keep a pig.—F. C. N.

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PERHAPS you have been putting off buying an engine until you could lay by enough money to pay for it.

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THE HORSE

WEEK-END CARE OF THE HORSE THAT WILL INCREASE HIS CAPACITY FOR MORE LABOR

The attention and feed given horses in general on the farm is calculatetd by the average farmer as so much expense, when literally it is money and time well invested. The farmer who looks upon horse feeding as a necessary evil is the one who has not yet got the horse sense regarding efficient and profitable motive farm power. He has visions of a tractor, but it is an even bet that he would prove just as inconsiderate in his economy in its use, and find that it would cost him a great deal more in repairs and up-keep Tractors have to be well kept to get the best results, and so have horses.

Better Feeding More Power

The combined power of farm horses exceeds any power applied to other industries and it is also certain that if the same average treatment was portioned out to the mechanical power as is given, on the average, to the horse, the upkeep of that power would leave little profit to the industries that depend upon it.

Better horses has been the argument of most of the preceding articles but in speeding up greater production during the coming season, the care and feeding of the horse at present arrayed on the farm field, becomes the timely subject. Better horses and more of them, with larger implements would partially fill the gap in the depleted ranks of farm labor, but better attention and more careful feeding will add greatly to the power already on the farm. The war horse at the front is drilled, exercised anad fed with special care to make him fit for his special effort, and the horse on the farm, to do his extra, must also get special treatment. Those who keep their horses in sleek conditoin all the time are the men who know how important it is to keep them so. The feeding of the horse becomes their second nature and if they are asked how it is done, their answer will invariably be, "Oh, more or less according as they worked."

Courting Sickness

This is the first principle in horse care and in the sudden change from comparative idleness to grim hustle there is a very probable element of danger and loss to be avoided.

Don't get away with the idea that a regular full ration can be given with safety to the team on the first day that spring bursts on the land. A sudden change of diet, or increased quantity, courts sickness and incapacity for strenuous labor. Get to the full ration by gradual stages. To bring the power of a horse that has been comparatively idle during the winter to full capacity, is similar to nursing the gradual growth of a plant, from the seeding stage to the hardihood of ripening days. One and a half pounds of oats per 100 lbs. of live weight, and 16 to 20 lbs. of hay per day —which is considered about the average quantities of daily horse feed—is a rule of thumb method that has to be modified at certain periods as well as with certain animals.

Overfeeding on Sunday

One of the scourages that effects horse power on the farm is the "Black Monday" trouble. It is an heirloom of the practice of giving the horse a full ration on Sunday. Between Saturday night and Monday morning the horse is apt to get the least attention when practically it is the time to exercise grater consideration. A Saturday night ration of laxative nature such as a bran mash of boiled barley or oats mixed with bran and a tablespoonful of saltpetre added, is a safe way to end the week's strenuous feeding. In the old country the springtime feed, every night, is oats or barley and sliced turnips boiled together. This looks like trouble, but it is trouble that pays and nedd only be continued while grass is not available. Half the daily quantity of grain on Sunday will be enough, and a proper cleaning should be given them that day with curry comb and brush.

The Natural Process

Grass is the natural feed of the horse and is the one great stimulant to spring work. When they get accustomed to this changed ration they should be let free for two or three hours every evening, when weather and work conditoins admit. A stretch and a roll on the grass is a refresher to the horse that art cannot equal in domestication.

Have some consideration for the quality of pasture given him, as no energy can be generated from a field of weeds. And the same doctrine applies to the hay. Reserve for spring use the best hay in the barn; timothy hay is not a fit feed for a working horse. If it was over-ripe when cut or badly handled in harvesting, such feed is not a fit feed for a horse at any time.

Regularity in Attention

Regularity in feeding, watering and cleaning is another point worth while in fitting horses for their work. Horses are endowed with very retentive memories and can count with an accuracy better than they are credited with. Never disappoint them and you will keep the keen edge on their appetite. Clean out their mangers and feed them from a low one; the flow of saliva will be greater, anad idgestion therefore aided.

Watering, always an imoprtant item in horse care, becomes more important with spring activity. Let them drink liberally before meals, if they are not too warm. But though heated, a thirsty horse should be allowed some water. A draught of 8 to 10 mouthfuls will do him good and stimulate his appetite. After he has cooled let him have his full drink and then his ration of oats. Water should be before the horses at all times and they should get the opportunity to drink more freely before thana after feeding. Care of the feet will add much to the yabor power of the horse. Irrespective of shoeing, much torture and discomfort comes through neglect to cleana out, every evening, the dirt that becomes caked and hard around the frog. Much of the unsoundness found in horses is due to this neglect. A piece of bent wire, or similar ready made picker, is all that is required, and hang it up behindthe horses where it can be handy to get at every time you unhitch or unharness the team.

DEHORN WITH CAUSTIC POTASH

The practice is sometimes followed of cutting out the horns of young calves. This is done by using a sharp knife and simply lifting out the small horns or "buttons" when the calves are a few days old.

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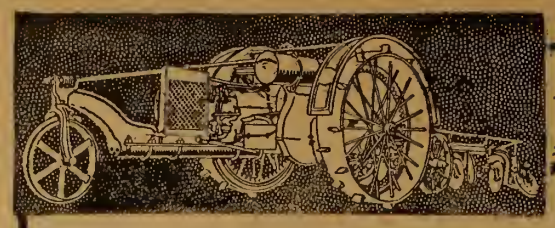

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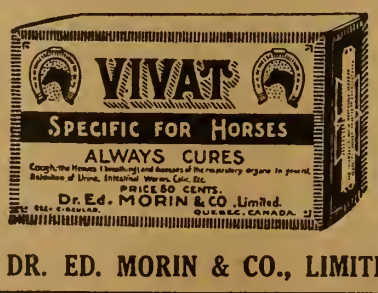

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HORSES OF BEST QUALITY ALWAYS IN DEMAND

There are many farmers who say the horse business is dead, but it would be far more true if it were said that it was only the interest in horse breeding in many districts in Canada, that is dead. "There is no where in Ontaria or Quebec where I can pick up a carload of drafters," was a remark lately made by one of Canada's greatest horse breeders and traders. A market can only be created where the desired article can be obtained. Until heavy horses are bred in sufficient quantity tnd of uniform quality, there never will be any demand for them in these provinces.

The Penalty of Neglect

Meantime, where such horses are bred in any number there is a keen demand for them, and the next few years will find the world confronted with a serious shortage of horses and consequent high prices. The price meantime has never been so high for geldings of the age and type, demanded for heavy draft quick movers. A decrease in the number of best class horses is a serious matter, and one that cannot be remedied in less than four years, and this only where there are plenty of breeding stock of the right sort. Even with plenty of breeding stock, then ecessary supply of work geldings cannot be raised in one year, it takes four years to make a work horse.

A serious mistake will be made if horse breeding is neglected in the near future or carried on with the same indifference as to market demand, as has been done in the past. The time is past when it will pay to produce the common light horse or scrub of any kind.

While good prices have been maintained for high class horses, the fact must be emphasized that each year finds city buyers discriminating more severely against inferior horses. Quality in the horses many Canadian farmers have been producing, has not kept pace with the increased demand for quality, upon the part of buyers and users, and they are now paying the penalty for this neglect in the form of inefficient work horse and a decidedly weakened demand for the average kind they have on hand.

No Fixed Idea in Horse Breeding

Not only is the poor type of horse unprofitable, but their influence is bad. There is always a lack of interest where the keen commercial element is absent. In the surroundings where grow up the scrub or mediocre type, there is no inspiration given to horse breeding, or opporunity to study horse market conditions. There are too many districts in Canada where farmers have no fixed idea in regard to their horse breeding operations. They forget that the most desirable farm horse is also the most desirable market horse. The prominent idea among farmers, that the horse that is not good enough for a market horse is good enough for a farm horse, must be discarded.

Motive power that is done with the unsound, poorly shaped, and undersized unmarketable horse is a most expensive item on the farm. The desirable market horse on the other hand, gives the motive power to the farm free of charge, and leaves a monetary profit over and above his services.

Keen Demand for Heavy Horses

There is a keen foreign demand for the best class of heavy horse just now, and it is likely to continue for several years. When the world settles down to business again and shipping becomes normal between nations, the horse trade will be the first to respond and the best horses will command very high prices. Calculating the future market on the state of the present for scrub stuff, will always place horse breeding operations at a discount. There can never be any demand in Canada for the best class of horse, till the best class of horse is bred here. Hired labor is made more efficient on the farm when the team is fit and heavy. The general tendency is towards a heavier and larger implements in order to cultivate deeper and speedier. The virgin vigor of the soil is leaving older Canada and the heavier horse is a natural consequence.

There is therefore greater economy in increasing the size of horses, rather than adding to their numbers. . Wider implements demand greater power and the most economical power available is the heavy draft horse, and the hired help with the aid of these can accomplish far more work than under conditions set around with a poor type of horses and antiquated implements.

The present state of affairs, in the economy of farm labor, is educating the forward and intelligent farmer to the necessity of having the powerful team, if he is to contend successfully with the need for greater producion, with lessened facilities of getting added hired help. On many farms the crop production is curtailed by lack of efficient horses and it costs less to develop a good horse than a poor one.

The demand for heavier implements has given an impetus to the increased demand for tractors, but there is room for both heavy horses and tractors in Canadian agriculture. The motor car can take the place of the light horse, but there has not a competitor entered field that can economically contest the place with the heavy horse.

Kind of Horse to Raise

Farmers can raise better horses than they can afford to buy, and they should devote more attention to this part of farm management. The deepest concern of the horse raiser should be the kind of horse he raises, for there are all too few that are bred and fed with sufficient care and thought to insure the development of the desirable horse.

To meet the market successfully the farmer must study the general industrial conditions carefully, in order to recognize the efficient type of farm horse. A well defined, correct ideal as to type and conformation is an absolute necessity before one can hope to succeed in raising profietable horses. Style, quality and action are desirable in draft horses, while substance is an absolute necessity. Drafters weigh from 1,600 lbs. upwards, the bigger the better, providing they have quality and finish, and are easy, snappy movers. Probably no horse is less in demand anywhere than the big horse without these qualities.

Scrub horses and old-fashioned tools are a drug on agriculture, and places rural life and enterprise in abeyance. Good horses and modern up-to-date equipment would draw the good hired men, and these alone are the only quality to be trusted with the spirited and highly bred drafter.

No branch of live stock breeding will return better profits than that of breeding the darft horse, when properly managed. This fact has been proven in every country where agriculture is successfully undertaken, and it seems strange that many farmers still persist in working geldings only half matured, and breed scrub horses that are not wanted anywhere. This is the reason why they complain that no buyers are around when they want to dispose of their surplus stock. If farmers would raise the good horses they would not have to look around for buyers.

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P-20

POULTRY.

THE PASSING OF THE HEN

Tell me not in mournful numbers that
he hen is going by,
That she doesn't earn her "foder" as
the grain bills soar on high.
Every time the greedy magnate gives
the price of grain a boost
Means the closing of the hencoop and
the downfall of the roost.
In the world's broad field of battle, in
the stricken haunts of men,
They are crowding out the cattle and
the meek and humble hen.
And we've marked the disappearance
of our one-time friend, the horse,
As the puffing panting auto spins its
all uncertain course.

Our grave and learned scientists are
busy as can be,
Making substitutes for products erst-
while "Made in Germany."
Can it be the time is coming when
'twill be their happy boast
They can give the worud a substitute
for breakfast egg on toast?
How we'd miss the cheery cackle of
the plump Rhode Island Red,
The crowing of the chanticleer that
calls us from our bed;
Oh, the echoes round the homestead
will be void and empty when
The march of progress has declared
the passing of the hen.

[Katherine L. Danhier.

THE FIRST TWO WEEKS IN HISTORY OF CHICK HAS LIFE LONG INFLUENCE

Thousands of chicks die every year through the use of poorly constructed brooders anad through the poor management o fthe ir caretakers. After the chicks are hatched the success in raising them depends largely upon the care they receive during the first two or three weeks of their life. Many who raise poultry find brooding the hardest part of the business.

Be sure the brooder is ready to receive the chicks as soon as they can be taken from the incubator. A neighbor of mine once ordered one hundred baby chicks and when they came he had no place to put them. Of course he suffered a great loss and laid most of the blame on the man who sold him the chick. I may be a crank on brooding, but a chick well brooded can easily be picked from a flock that is not. The losses are smaller and the chicks thrive much better, thus repaying one for the extra work. There are several good makes of brooders on the market that can be purchased very reasonably, but to my mind a home-made one, if made the right way, will produce just as good results. I have used fireless brooders but during cold weather one needs artificial heat.

In making a homemade brooder take an old zinc tub, cut a hole in the middle of the bottom about three inches in diameter. Fasten four legs on the inside and let them extend three inches. Turn the tub upside down, letting it stand on the legs. This leaves enough room so the chicks can go in and out when they want to. Place an incubator lamp under the center, letting the chimney come directly under the hole that was cut in the bottom of the tub. Next take a piece of screen cloth making a cylinder out of it just large enough tot fit around the lamp. This keeps the chicks from getting too close to the heat. Of course a brooder of this sort has to be inside.

My brooding is done in small colony houses. They are made air tight; made of good siding and lined with plaster board, having a small window in the front covered with screen wire. In cold weather a muslin frame is also used over the opening. Where one does not want to go to the expense of buying plaster board, a covering of a good grade of roofing paper will answer the purpose and do just as much good. These houses are six by eight and will accommodate two or three brooders. Do not trust more than seventy-five chicks with each brooder.

A round brooder saves the lives of several chicks, because there are no corners for them to crowd in and trample the weak ones to death. The first lesson a chick must learn is where to get warm. A hen's body is sufficient to warm them quickly, so they do not need to be covered for long at a time. The first day or two they have to tbe watched closely to see that they find their way into the brooeder where artificial heat is supplied. It will not do to let them stay out too long, as they become chilled and get stunted. They soon learn where to go, and there is usually no further trouble.

As I said at the beginning, if a chick can be brought through the first two or three weeks of its life with its vitality unimpaired, successful rearing to maturity is practically assured. The beginners in poultry raising usually have their experience. They honestly belive that the chicks must be provided with food as soon as hatched, and they can not rest satisfied unless they are constantly stuffing the chicks with feed. If they would withhold all feed for forty-eight hours after hatching, the results they would obtain would be surprising, and the mortality would be reduced.

nI my experience I find that when bread and milk are used for the first meal and first few days' feeding the best results are obtained. They need something that is easily digested and is nourishing at the same time. Bread and milk is an ideal feed in this respect. The chicks relish it very much. Use only stale bread (never fresh), such that is dry and will crumble easily. Never wet it so it will pack, but use just enough milk in the mixing to elave the bread in a crumbly state. If possible never feed more at a time than they will eat up clean. When any of the soft feed remains, it should be cleaned up and removed immediately, as it quickly sours and becomes unfit for consumption. The best results are obtained by feeding often and sparingly.

The bread-and-milk method of feeding the first three days has a tendency to produce growth and give the chicks a good start. After this feeding for three days the chicks are given a good bone-and-muscle-forming feed, such as steel cut oats or rolled oats, as these are pure and wholesome. I much prefer them for the first two weeks. As the chicks should be kept busy, scatter their feed in chaff used for litter and let them scratch to find it. The litter should be about an inch deep, as such a depth enables them to get around easily, yet they must work for their feed. After the two weeks' feeding of oats, start on the regular prepared chick feeds. Always insist on getting the best of this feed as great mortality often results from the feeding of damaged grain. It is not advisable when using this feed, to omit all soft feed. Ground feed of some kind aids wonderfully in development. Either include a wet or dry mash. Where a large number of chicks are raised the dry mash system cuts down the labor in caring for the chicks and the rsults will be found to

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be just as good as when the moist system of feeding is used. When the moist system is used feed it twice a day and the grain feed three times a day. Bone meal mixed with the mash produces good results. When no meat feed is available, milk sould be substituted as it answers the purpose equally as well. Kepp it before them in a clean vessel.

Arrange the water vessels so the chicks cannot get into them with their feet as chilling will often result, thus causing bowel trouble. Where chicks are confined in yards they must be supplied with green stuff. Fine alfalfa meal mixed with the ground feed will answer the purpose, if no other can be had, although sprouted oats cannot be beaten. They sould be fed when quite young as they are then very tender. As the chicks become older the feeds per day can be decreased to three but the amount should be increased.—O.M. Allen.

PROLIFIC STRAIN OF LAYERS FROM HEALTHY HENS

Early attention to the selection of the breeding stock will assist materially in the building up of a good strain of layers. The hens for the laying of the hatching eggs should be chosen with just as much care a is exercised In the selection of males for mating. By careful observation before the breeding season begins, it is possible to note the strong points of the various hens and determine any tendency toward weakness. To get a prolific strain of layers, it is essential to choose only vigorous, healthy hens, prloific layers themselves and which have been bred in line from stock carefully chosen for like characteristics. Like tends to beget like, so that hens chosen from a single line of breeding, and possessing the desirable qualities of heavy layers will tend to improve and develop the strain in a highly satisfactory manner.

Where the flock is large and it has been necessary to arrange the hens and pullets in separate flocks for the winter there is an excellent opportunity to cull out the weaker and less desirable fowls and maintain them in a flock by themselves, while the vigorous hens intended for breeding may be hoosed in a separate enclosure. This arrangement makes it possible to confine the breeding flock within suitable enclosures during the time they are mating and their eggs are being saved for hatching purposes. Nothing pulls down the value of a good flock of hens quite so quickly aas to use eggs for hatching that have been laid by any and everything in the flock. Many infertile eggs and weak chicks are the result of carelessness in this matter. No male should be allowed to run with the poorer fowls. Infertile eggs will keep better and are better for the market.

In choosing the male birds it is necessary to keep well in mind their characteristice and breeding. Each generation of their offspring should tend to improve the quality of the strain. They should be physically well built, vigorous hens that have been bred in line from stock that has graded near to what you desire. Careful selection and breeding tends to develop individuality of character that may be maintained and improved upon with each succceeding generation. Nothing but the best should be admitted into the breeding enclosure. A small flock of well chosen hens will produce as many eggs as are required for hatching purposes. Then, too, if any eggs are offered for sale the breeder can truthfully recommend the quality of the eggs and the character of the offspring which they will get.

Building up a satisfactory strain of prolific layers is not the work of one or even two sessions, it is the culmination of a constant effort applied year after year along a definite line of breeding and selection, choosing each year, breeding stock which most nearly meets the requirements in every way sought for. nI the matter of producing eggs for hatching purposes, the breeder should be just as careful and exacting as though he were purchasing eggs to add quality to his flock. Pure-bred fowls of a standard variety will respond satisfactorily to careful breeding. Good care and feeding will do the rest.—P. H. EATON.

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MARKING OF CANADIAN EGGS FOR EXPORTATION

An Order-in-Council passed on 5th April, 1918, makes the following provisions as to the marking of cases containing Canadian Eggs to be exported from the Dominion:

"Every case containing Canadian Eggs intended for export out of Canada shall be marked on both ends in a legible and indelible manner, with the class and grade of eggs contained therein, and the words 'Canadian Eggs,' and every case containing eggs that are to be shipped from one porvince to any other province in shipments of 100 cases or more, shall be marked on both ends with the class and grade of the eggs contained therein, and with the name of the country of origin when other than domestic product. The Minister may from time to time prescribe the form and size of the letters that are to be used in such markings. Such marks may be accompanied by other trade designations or brands providing such designations or brands are not, in the opinion of the Minister, inconsisten with or marked more conspicuously than the marks prescribed in the regulations.

Canadian Eggs for export out of Canada shall be tightly packed in Canadian standard cases in new white fillers and flats, with kiln-dried excelsior or corrugated cushions at top and bottom, or one-third fillers on bottom with flats over tops and under bottom of filllers.

The mark of approval to be placed on each case, hereinafter called the "Government Mark," shall include the Maple Leaf and the words "Canadian Eggs" and "Government Inspected" together with the Inspector's Number, the device to be in such form as the Minister may approve.

No person other than a duly appointed Inspector shall apply any Government Mark to any cases containing eggs.

Collectors of Customs throughout Canada shall not allow any Canadian eggs to be shipped for export out of Canada that are not marked in accordance with the regulations."

HOW TO GET RID OF MITES

Be sure that the house is free from mites. These little pests get into the cracks and corners of the building and at night, as the hens are resting, they come out of their hiding place, get on the hen's body and it does not take very many of them to make a hen so uneasy that she cannot sit. In some cases the mites become so trobulesome that they actually worry the hens to death.

Clean out the house and thoroughly sweep, not forgetting the windows, walls and ceiling. When this is all swept out clean, use a garden hose or a stiff brush and hot water. See that everything in the cracks and crevices is washed out. After this is done allow the house to dry for a while and if everything then appears to be clean, use a good disinfectant and be sure that the solution is forced by the spray or brush right into the cracks and crevices. If the mites are bad, use boiling water followed by coal oil and a liquid lice killer or lice paint. Be sure that this goes into the cracks and crevices and when you have gone over your house thoroughly according to the above treatment, in all probability the mites will be exterminated, but it it advisable in the course of three or four days again to inspect for the mites and perhaps to repeat the dose once more.

PEERLESS GATES

Down the road or far across the fields is often an "entrance," a mere hole in the fence, a constant source of danger to stock getting through. The best way to

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is to provide real gates, strong and durable. All Peerless Farm Gates are of heavy open hearth steel wire on strong tubular steel frames electrically welded in one solid piece, and **braced like a steel bridge.** No sag, no rust, no wearing out. Ask your dealer to show you Peerless Gates, also Peerless Perfection Farm and Poultry fencing with the famous Peerless lock at all intersections.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

TOWARD LIBERTY A PRAYER

Now that we answer blow for blow
And courage takes the place of shame,
Now that we leave soft peace and go
Into a world of blood and flame.

Now that our patient faith becomes
A sword, and even fear turns brave,
O, God, let not the angry drums
Beat down the things we fight to save.

Let not our passion or our pride
Bring us disgrace by word or deed;
Knowing that though our wounds are wide
It is for liberty we bleed.

Preserve our hearts from poisonous hate,
That when we come to spend our youth,
We can give gladly in the great
Battles for tolerance and truth.

And we shall sacrifice and grow
Nearer our high and rousing aim,
Now that we leave soft peace and go
Into a world of blood and flame.

—Louis Untermeyer.

THE SONGSTER

Music, music with throb and swing,
Of a plaintive note, and long;
'Tis a note no human throat could sing,
No harp, with its dulcet golden string,—
Nor lute, nor lyre with liquid ring,
Is sweet as the robin's song.

"He sings for love of the season
When the days grow warm and long,
For the beautiful, God-sent reason
That his breast was born for song.

"Calling, calling so fresh and clear,
Through the song-sweet days of May,
Warbling there and whistling here,
He swells his voice on the drinking ear,
On the great, wide, pulsing atmosphere,
Till his music drowns the day.

"He sings for love of the season
When the days grow warm and long,
For the beautiful, God-sent reason
That his breast was born for song."

—E. Pauline Johnson.

HOW TO HAVE HEALTH AND COMFORT DURING HOT WEATHER

When autumn comes most of us sigh at the thought of summer departed and think regretfully of the many things which we had meant to do, but which each succeeding fall sees undone. I should like to suggest that we exchange afterthoughts for forethoughts and prepare for the coming days by planning what we hope to do while they last. I have a theory which I have frequently stated in these pages, that our failure to do the things we long to do is due as often to our own lack of effort as to untoward circumstances. So I think that we might make the most of the summer months and really feel when they are over that we had accomplished our desires if we would but put our wits to the tack o fwhat we want to do.

I suppose we all want to be out of doors in the summer. This northern climate insists on so many months indoors, that we feel constrained to make the most of the days when it is possible to be outside. Let us see how we can accomplish this first of our summer wishes. First of all, if this is not a contradiction of terms, we can bring the in-door air into the house. It seems as if it should be unnecessary to insist on fresh air in the house, but the fact is that there are few houses that are really open to the winds and air of heaven in the warm days, not to speak of the old ones.

Too few windows are provided with screens, or if screens are used they the small or inadequate ones. It is a laudable ambition to keep the fly out, but it is a pity to exclude the fresh air at the same time. Home made screens can be made at comparatively small cost, which fit over the whole lower half of the window, buttoning on from the outside after the manner of a double window. These are secure for the whole summer and do not interfere with the raising and lowering of the window, which can be put up as far as one pleases. Such screens should not be put merely on one window of the room, but on all the windows, so that the house can be as open as possible. This, of course means a cool house in the hot weather, but more important is the provision for the constant circulation of fresh air through all the house.

While the bringing the outdoors in is all very well in its way, to take ourselves out is far better. Yet how many people have fine verandahs on which they seldom sit. The verandah should find abundant use during the warm weather. To begin with, wherever possible, verandah balconies should be utilized for sleeping porches. Not that sleeping out of doors should be confined to warm weather, but most people will begin when the heat drives them out and then to continue when they discover the charms of sleeping in the open air. The sleeping porch should have a cover, but if there is no roof, an improvised tent can be made to serve the purpose. The porch should be screened, as anyone who has tried sleeping out when the mosquitoes are active will avow. People who are doubtful of the advantage of sleeping out of doors should try the arrangement to prove for themselves its value.

To eat out of doors is the next step of what may be described to different points of view as sane or faddish living. Do not say, lady of the house, that you have no time for such nonsense, for it is really no trouble if you manage properly. I shall never forget a farm home where I once spent an unusually pleasant Sunday and where all the meals were served out of doors. A large verandah opening off of the kitchen had been screened with wire netting. Here the table was set and here all the meals were served. It was no trouble to have meals out there and the food seemed doubly appetizing. When the meal had been cleared away, the place had been transformed into a sitting room. A hammock slung in one corner invited to rest, there were magazines scattered around, and on week days a sewing table was an important part of the furnishing. The verandah was the actual living room of the family all through the summer. The morning's work was done as far as possible out there, the afternoon's tasks or pleasures were carried out there also, the meals were served there, and at night some of the family slept there.

This is a convenient and economical arrangement as well as a healthful one, for the house itself was free from wear and tear all summer, and it needed practically no cleaning, whereas the cleaning of the verandah was a simple matter. All this was accomplished by putting a few dollars into wire netting to screen the place. The screening gave the protection so necessary against flies and mosquitoes, and also the privacy which is so desirable in such an arrangement.

All sorts of furniture suitable for porches can be purchased at comparatively low prices and each year sees prettier things for this purpose put on the market. It is quite possible to make the porch attractive with things borrowed from the house, but at the same time if one has any idea of buying it is well to have some idea of what is desirable. Avoid, above all things, fussy arrangements that are supposed to be decorative, mistakenly. Choose cool colors, and simple, easily adjusted furniture. Some of the swings and seats offered on the market are to elaborate to be satisfactory. Wicker furniture is perhaps the best buying, as it wears well, is not spoiled by the weather and is light and easily moved, an important consideration. Grass mats of the various kinds on the market are good for floor coverings if such are desired.

Green awnings may be necessary, but have proper ones and do not be beguiled by bamboo curtains or anything of that like. Green is probably the most satisfactory color to use in furnishings. Light covers may be made for cushions which will be needed in abundance if a comfortable porch is to be made. Pretty and inexpensive chintzes can quickly be run up into covers, and these may be slipped over the cushions, which, in other garments do duty inside the house in winter. Don't put any ruffles or furbelows on the covers. A broad hem stitched around is all that is needed by way of finish, and elaborately worked cushions are out of place in a porch where simplicity should be the dominating note. The covers should be made so that they can easily be slipped off and put in the wash when they get dirty.

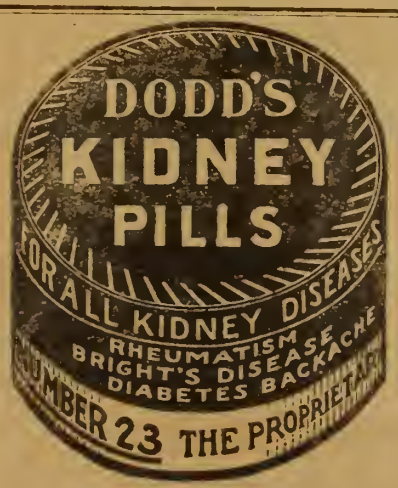
We have spoken of the absolute necessity of screening a porch which is to be in steady use if comfort is to be had. Scarcely less important is the matter of lighting. It has become general, wherever electric lights are had, to have a light on the porch. This is placed high up on the ceiling, is of no use for work and throws such a glare on the porch that its occupants are clearly seen by passers-by. Privacy is thus destroyed. In the new designs for furnishing porches are to be found tall lamps of wicker into which a light is dropped. This throws light on one's reading or sewing and still leaves the rest of the porch in a soft gloom. It is not necessary to buy one of these expensive lamps in order to carry out the same idea.

So much for the porch. In passing one might suggest that people who cannot or do not wish to make an outdoor living room of this sort might at least make the inside living room look summer-like on the same lines. Why not take down all heavy portieres and draperies and leave the room free, or else use in their stead, curtains of lighter, more summery wash stuff? Similarly, imposing embroidered covers on cushions might be banished for the summer and light, washable covers put in their place.

So much for the house, now a word about cooking. I would suggest first of all considering the meals so as to do away wherever possible with the work of cooking. First, vegetable should be used as far as possible and the garden should be the source of much of the housewife's summer supplies. Vegetables may be used in salads or cooked, but this does involve heavy work. It is often possible to distribute the tasks so that the children will gather and clean the vegetables for each day before they go to school or play. It will be good training for them to be responsible for this duty and it will lighten the work of the mistress. Then cooked desserts may be almost banished from the table, fresh fruits taking their place. In the early summer, oranges and bananas can still be had and later there are the small fruits which we will hope the garden supplies. This would greatly simplify the preparations for the main meal of the day.

For supper there should be a corresponding change in the character of the food served. Potatoes, if they still find a place on the table, will probably be more welcome in a salad than fried. And other salads should also be used. There is an unfortunate prejudice against salads in this country, which is largely due to the fact that they are not largely used. It is a pity that people should not try them more freely for they are not expensive, they are easily prepared and are particularly wholesome in hot weather.

I suppose it is carrying coals to Newcastle to suggest to people who live in the coutnry that the early morning is the best time to work, that it pays to get the heavy work done then and to rest in the heat of the day.



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NEVER NEGLECT
BRONCHITIS
IT MAY TURN TO PNEUMONIA.

Bronchitis comes from a neglected cold, and starts with a short, painful, dry cough, accompanied with rapid wheezing, and a feeling of oppression or tightness through the chest.

You have, no doubt, wakened up in the morning and have had to cough several times to raise the phlegm from the bronchial tubes, and have found it of a yellowish or gray, greenish color, and you have received relief right away.

This is a form of bronchitis, which if not cured immediately may turn into pneumonia or some more serious trouble.

Cure the cold with Dr. Wood's Norway Pine Syrup and thereby prevent bronchitis and pneumonia taking hold on your system.

Mr. E. Jarvi, New Finland, Sask., writes:—"I was troubled, for years, with bronchitis and could not find any relief. I was especially bad on a damp day. I went to a druggist, and asked him for something to stop the cough and constant tickling in my throat. He gave me a bottle of Dr. Wood's Norway Pine Syrup, which I found gave me instant relief. I think it is the best medicine for bronchitis I know of. Now I take care I always have a bottle of it on hand."

Do not accept a substitute for "Dr. Wood's." It is put up in a yellow wrapper; 3 pine trees the trade mark; price 25c. and 50c.; manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

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VOL-PEEK

However,, I allow the suggestion to stand for the benefit of those town dwellers who may chance to fall upon these lines and, let us hope, be saved from sloth by such excellent advice.

But, speaking of the question of rest, might it not be possible to save a part of each day for rest or amusement, a sort of summer day in instalments? Almost anything can be accomplished by determination and careful planning, and I think even this might be done if the day's work was planned with that in view and the time for rest as jealously guarded as that which we devote to work. The trouble, I fancy, is not so much that people can't find time to rest but that their consciences will not let them rest. I do not mean to suggest a guilty past, but rather that we have developed such a genius for work that we feel as if we were doing something wrong if we idled for one minute. Pray remember that whenever you rest you are simply storing up energy for use in times to come and that may justify you in the taking of a much needed holiday.

I believe that most of our women work so steadily and so hard that they do not realize how tremendous is the drain on their strength. They do not know what it means to be really fit for work, nor do they realize how dangerously close they are to the end of their resources until something happens to use up their last bit of energy. Then the crash comes, for which they have been totally unprepared, and which might have been avoided by a little caution at the beginning.

We may all take warning from the alarming number of nervous breakdowns which we see all around us. Of course no one expects a thing to happen to her, but it is well to be forearmed. A little common sense in avoiding steady overstrain might avert many serious breakdowns. I know that I am writing to many women who need this advice more than they possibly realize. Will you not remember that the price of overwork is heavy beyond all others and try to make this summer yield you, in spite of the work which the busiest season of the farm year is bound to bring, a little rest and pleasure in its opportunities?

THE OLD FURNITURE DOCTOR.

With Varnish, Patience and Elbow Grease She Puts Shabbiness to Rout

By Henry Wangner.

To attempt to make old furniture, floors and woodwork look like new requires time, patience and materials of the best grade. Without these three, disappointment will result. You can, however, refinish all woodwork, stained or painted in a very satisfactory manner if you will bear in mind a few simple rules.

FIRST—All varnishes and enamels are transparent. Therefore before applying them the woodwork or piece of furniture should be carefully prepared.

SECOND—It is better to put on two coats of thin varnish than one heavy coat. If the varnish flows on and spreads quickly, like an oil, it is all right. But if the brush draws or sticks, it needs thinning. To do this add turpentine, a few drops at a time, until you secure the easy, oily flow. Should you get it too thin, this does no harm. It will, in fact, make the varnish dry more quickly, but, on the other hand, will doubtless necessitate the use of three coats to insure the desired effect. A two-inch bristle brush should be used for varnishing.

THIRD—Each coat must be absolutely dry before applying the next and must be rubbed lightly with number 00 sandpaper. The room where varnishing is done must be warm, free from dust and from drafts.

FOURTH—Always begin your work in the corner of the piece. With your brush first carefully fill in and cover the corners at each end of the strip you are at work on. Then, with long strokes, sweep across. Begin at the top of the furniture and work down.

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WHEREVER a can of coal oil can be carried to, there you can have the cool, clean comfort of the McClary Florence Oil Cook Stove which does everything a good cook stove ought to do, and does it as easily, as cleanly and as conveniently as the best gas stoves. No valves or wicks. Just an automatic feed that vaporizes common coal oil into gas that burns with a concentrated, hot blue flame—under perfect control all the time.

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For 5 Years.

WOULD GO INTO FITS.

Through one cause or another a large majority of the people are troubled, more or less with some form of heart trouble.

Little attention is paid to the slight weakness until the heart starts to beat irregularly, and they suddenly feel faint and dizzy, and feel as if they were smothering.

On the first sign of any weakness of the heart Milburn's Heart and Nerve Pills should be taken, and thus secure prompt and permanent relief.

Mrs. W. H. Ferrier, Kilbride, Ont., writes:—"I was troubled with my heart for five years, and was so bad it would send me into fits and smothering. I could not do any work while I was affected, but after taking three boxes of Milburn's Heart and Nerve Pills, I have regained my health."

Milburn's Heart and Nerve Pills are 50c. per box at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

FIFTH—Remember that varnish runs. Watch carefully for any indication of this while the varnish is wet, as nothing can be done after it is set. If you detect a drop or a running streak, quickly and carefully brush across, after wiping the brush on the edge of the can as free from varnish as possible.

SIXTH—Always choose a warm room for the work of refinishing. It should be free from drafts and the windows on no account must be opened, for fine particles of dust will settle on the wet varnish and spoil its smoothness. Having learned these rules, now prepare the furniture. Every article of furniture or woodwork to be revarnished, or re-enameled or stained, should be cared for in this way: Wash the article of furniture thoroughly with water and very little soap. Then dry thoroughly. Now wrap a soft cloth around a sharp-pointed stick to reach into all the corners and carvings. It may be well said that if you take good care of the corners, the rest of the piece will almost finish itself.

After the piece of furniture is dry, sandpaper carefully with number 00 sandpaper. Be very careful to work only with the grain of the wood so that no cross-scratches will show. Be sure that you get a smooth surface. Now dust the furniture carefully with a soft duster. If the room is warm, you are now ready to varnish.

If your piece of furniture is of mahogany or any other good wood, of which you do not wish to change the color, all that will be necessary is to revarnish.

After the furniture has been prepared as directed, apply a thin coat of furniture or interior varnish, carefully and not too heavily. Allow this coat to dry thoroughly. This requires two days at the very least. The piece of furniture is now ready for a second sandpapering. Do this lightly until all gloss has disappeared. Apply the second coat of varnish as carefully as possible and allow it to stand until dry. Four days is not too long a time for this. Never hurry this part of the work.

If a glossy finish be desired, the work may now be considered finished but if the dull or "rubbed" finish be desired, the furniture must have further treatment. A piece of soft felt or cloth is necessary, a peice of an old, soft felt hat being excellent. Buy at any paint store a few cents' worth of powdered punice-stone. Mix this with a small amount of any good machine oil until it forms a thin paste. Now apply this mixture to the furniture by dipping the felt in it and rubbing carefully back and forth—back and forth—always in one direction. Continue this until all gloss has disappeared and the surface is perfectly smooth. Now rub with a dry, clean cloth, and a rich dull finish will be the result.

Should the furniture have carvings, rub over with the punice-stone and felt. Then wrap a soft cloth about a very sharp, thin stick and dig in around the crevices. Continue until all these parts are dull and smooth. Then rub with the soft dry cloth.

Should the furniture have cravings, rub over with the pumice and felt. Then wrap a soft cloth about a very sharp, thin stick and dig in around the crevices. Continue until all these parts are dull and smooth. Then rub with the soft dry cloth.

If you have a genuine piece of old mahonany, rosewood or any valuable wood, and if (as so often happens) this has been varnished again and again until the varnish is thick and heavy, purchase a can of varnish remover at any paint store. Apply a coat of this and let it stand for 15 minutes, then with a broad-bladed putty-knife, scrape off varnish. If all the varnish does not come off easily, apply another coat of the remover and proceed as before. When all the varnish is removed, sandpaper well and carefully with number OO sandpaper until the surface is smooth. Now proceed exactly as directed when varnishing furniture, using three coats of varnish. To give this furniture what is known as a "piano" finish, after the last coat of varnish has completely dried, mix a thick paste of powdered pumice stone and cold water. Rub the furniture with this until all gloss has disappeared from the varnih and the sufrace is smooth. Have ready a paste made of rottentsone (purchase a few cents wort hat any paint store) and cold water and rub with this until the surface appears even smoother than before. Then wash wiht a sponge dipped in clear, cold water and dry with a perfectly clean piece of chamois. Then polish with good furniture polish applied with clean cheese-cloth. Rub until a high finish is obtained. This is the "piano finish."

I would state, however, that this finish is difficult for an amateur to obtain, for this reason: An inexperienced person so often, while rubbing with the pumice stone and rottenstone pastes, rubs through varnish. If you like you can apply to this old furniture a "waxed" finish instead of either a rubbed or piano finish. After the old varnish has been removed do not ap ply any varniish. Instead, apply a coat of thin shellac. Shellac however, dries so rapidly that the work must be executed with the greatest dispatch.

If the shellac is too thick to flow freely, add a small quantity of wood alcohol, a few drops at a time, in the same manner as when thinning the varnish, trying it with a brush (as in the varnish) until it flows easily. Use a two-inch bristle for this. When the coat of shellac is thoroughly dry, sandpaper with number OO sandpaper very lightly and carefully. If the grain of the wood does not appear to be well filled with the shellac and the surgace is not smooth, apply a second coat of shellac evenly. Sandpaper this second coat and then apply prepared wax, which may be secured at any paint store. Apply this with a soft cloth and rub until an even surface is secured. When the wax is dry, polish with dry cheese cloth.

A fresh coat of wax may be applied as often as one desires to make the furniture look fresh. This is the finish that our ancestors admired and many a small colored boy and girl has spent hours polishing "ole massa's" furniture to obtain it.

To refinish a chair that has been stained to imitate some other wood, the best results are abtained by purchasing a stain of a little darker color than that on the chair. This may be obtained at any paint shop or department store's house furnishing department. It must be stirred well before using. Wash and sandpaper this furniture with the same care and in the same manner as described above. When dry dust with a soft duster and

Grand Old Man Makes Statement

MR. GEO. SOMERS FINDS DODD'S KIDNEY PILLS BEST

In His Eighty-second Year He Tells Why, After Trying Other Medicines, He Pins His Faith to Dodd's Kidney Pills.

Barrie, Ont.—(Special.)—Mr. Geo. Somers, Barrie's grand old man, now in his eighty-second year, has made a statement in regard to Dodd's Kidney Pills, Canada's grand old kidney remedy. "I have tried several kinds of kidney pills," Mr. Somers states. "I have arrived at the conclusion that Dodd's Kidney Pills are the best so far; ta least they have given me the best satisfaction. I have taken them for nearly twenty-five years off and on as I have needed them."

Mr. Somers, who for forty years before retiring was a carriage worker, strained his back while gardening, and for over twenty years has been troubled, more or less, with his kidneys.

That he has pinned his faith to Dodd's Kidney Pills after trying the other kinds is considered a splendid tribute to the grand old Canadian kidney remedy. At his advanced age he is splendid evidence of the good work Dood's Kidney Pills are doing.

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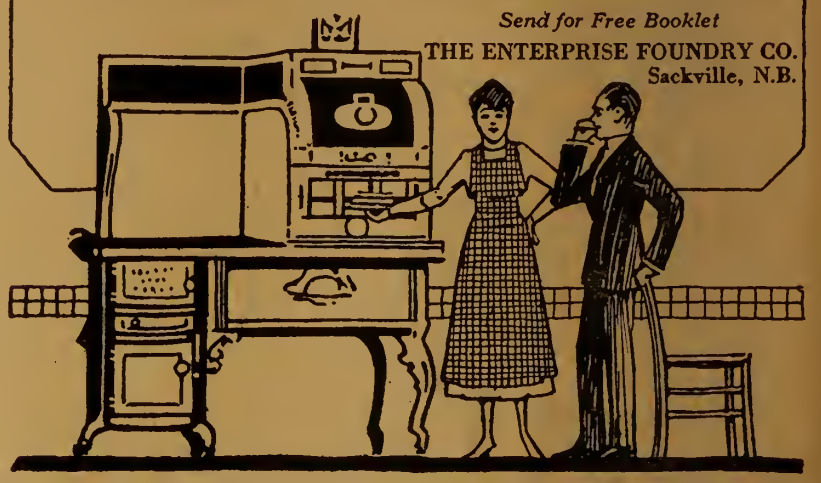

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apply the flat stain with a one and one half inch camel's hair badger or ox-hair brush. As this stain dries very quickly, finish each part commenced before getting a second. For example if you begin a leg of the chair, finish its entire length. Otherwise, since the stain dries so rapidly, it will show where you left off work. When the chair is stained and dry, proceed as for varnishing and finishing. It is difficult for an amateur to get successful results in changing the color of furniture. Should you desire to do this, however, try to make the new color in harmony with the old one. For example, if your chair be cherry or mahogany, purchase a dark mahogany or rich brown. If it be light oak, however, almost any color will work in well.

One other hint in conection with using stains. By rubbing lightly with a soft cloth while the stain is wet, some of the stain will rub off, giving a shaded effect. This is especially effective on woods having a well-marked grain. Do not be afraid to use this cloth while the stain will rub off, giving a shaded effect. This is especially effective on woods having a well marked grain. Do not be afraid to use this cloth while the stain is wet. The color may so easily in this way be made lighter or shaded. But if once the stain becomes dry the color is set and must remain so.

LET a woman ease your suffering. I want you to write, and let me tell you of my simple method of home treatment, send you ten days' free trial, postpaid, and put you in touch with women in Canada who will gladly tell what my method has done for them.
If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:
Mrs. M. Summers, Box 309 Windsor, Ont.
A MESSAGE TO WOMEN!!

GROWING THE FRIENDLY FLOWERS

Friendliness of all the unpretentious garden flowers is the pansy, ready each morning to brighten the breakfast table, blossoming most freely when freshly cut. The culture of the pansy is simple, and the results are sure. It asks only a fairly rich, cool soil, and protection from the noonday sun, with plenty of water in a dry season. Shade from noon until three o'clock in the afternoon is desirable, but if there is too much shade the blossom will be small. To raise one's own plants it is necessary to start the pansy seed in the house in February, transplanting to the open ground in May. As the weather grows warmer water should be given in abundance. It is most important that all the old blossoms should be picked. To maintain the vigor of the plants, cut them all back in July.

Perhaps nasturtiums come next in the list of friendly flowers. Few plants are less exacting as to soil. Really a rather poor soil is better than a rich one, for rich ground causes an immense growth of foliage, but at the sacrifice of bloom. One reason we have a friendly feeling for nasturtiums is because they lend themselves so well to house decoration. Great bowls of them brighten and glorify the living room, and one never need fear a clashing of colors, for all the shades in which the nasturtiums are found harmonize wonderfully well.

Sureyl mignonette, sweet alyssum and candytuft must be counted too. They like fairly rich soil and object to being moved, so they should be started where they are to grow all summer. Seeds may be sown early in May and pressed into the ground very lightly. Several later plantings of mignonette are advisable in order to have a long succession of the sweetly scented flowers, and care must be given to the cutting of the flower spikes, for if the seeds are allowed to ripen, the plants will stop flowering.

The petunia also makes an irresistible appeal to everyone. Seeds may be sown in May and thinned to six inches. Early plants are secured by starting seeds in the house in March. The seeds are very small and should be barely covered with soil.

Bachelor's buttons must not be overlooked. They are generous with their quaint bossoms the whole summer through. Seeds should be sown in March or April and the plants thinned from four to six inches. The best way to get very early blossoms is to sow the seeds in the fall, covering the beds lightly with leaves during the winter.

The sweet-pea is the spoiled darling of the garden. It gives its best only to those who are willing to pamper it. If you would try to win its friendship, plant the seeds as early as the ground can be worked in trenches, but first dig over the soil to a depth of two feet. Make the ground rich by using sheep manure and wood ashes—stable manure breeds cutworms—and when the vines are up train them on brush.

To get on really friendly terms with poppies, plant a bed of Shirleys. Then get up early enough to watch them unfold in the dewy freshness of the morning. The tightly closed buds open so daintily that you watch them with a pleasure rare to a garden enthusiast.

Poppies give color to a garden all summer. The annuals should be planted in a sunny spot and covered very lightly.

Last on the list let me place cosmos, that delicate fall flower which seems to beg for our friendship by brightening the close of the garden season. It is best to start the seeds in the house and to give the plants a sheltered position from high winds.

Rock these Grates

"Shaking down" a range fire has gone out of fashion. Kootenay Range duplex grates need only be rocked gently.

If you have used the old fashioned jolting shaker you will hardly believe the fire is really shaken down when you rock the Kootenay duplex grate.

Kootenay range grates let all the ashes fall into the ash pan but they keep the clean hot fire in the firebox.

No ashes can cling to any part of Kootenay Grates. That is why you get a clear fire and the full benefit of your fuel.

"Service in the Kitchen." Booklet Free.
This is only one of many features of the Kootenay Range described in a beautiful little booklet, "Service in the Kitchen," which will be mailed free on request. It tells all a woman wants to know about a range before she buys it.

McClary's Kootenay Range

London Montreal Toronto St. John, N.B. Hamilton
Winnipeg Vancouver Calgary Edmonton Saskatoon
71

THE VALUE OF FRUIT AS A FOOD

All our cultivated fruits have a history behind them, running back to the time when the earliest gardeners picked out the best species from the wild and transplanted the tree or bush to a plot in the home grounds.

Delicately flavoured apples or juicy seedless oranges are the result of hundreds of years of painstaking effort. Improvements in size and quality have come through careful selection, aided by chance cross fertilization, which gave rise to new types. Each advance made, gave encouragement to further effort and so great have been the transformations that it is difficult to trace most of the modern forms back to the original species.

Fruits are divided into two classes —flavored and food fruits. Food fruits contain more than 20% solids; flavored fruits are apples, pears, quinces, oranges, lemons, lime, etc. Food fruits are prune, date, raisins, banana, fig, etc.

The fig is highly nutritious owing to the large amount of sugar in its composition. It is a laxative food. Banana is also highly nutritious. It is reported to yield more fruit to the acre than almost any other plant; one cluster

may have from 160 to 180 bananas. There is a banana meal which is made from the unripe banana. It is dried, ground and used in making bread.

Peaches are not nutritious, but are valued for their delicate flavor. Since they contain little sugar they are valuable to a diabetic patient. Olives are used as appetizers. They are gathered before they are quite ripe, steeped in lime water and pickled in brine to remove disagreeable taste. We obtain olive oil from the olive.

The apple, the king of fruits, was in its original wild form, small in size, often very acid or bitter and indigestible, and not much like the splendid apple that we have with us nearly all the year round which is so agreeable to the palate. How ever strawberries happened to be named, whether they were strung on straw and sold originally thus in lands across the sea, or whether they are so called because they need a heavy mulch of straw to bring them to perfection, matters not. They are considered universally "The Queen of Berries," and have a most important place in the early summer diet. The chief quality of strawberries is the acid; they contain one of the strongest fruit acids found in nature. This national tonic is most beneficial to the still sluggish blood left by winter's temperature, and is appreciated and enjoyed by most people. One of the benefits of this natural acid is lost if the fruit is cooked. It is unquestionably a fruit to be eaten raw.

If cooked, however, it is best to make a syrup first, dropping the berries in only at the last moment. This will preserve their shape, but most important, their flavor.

The cranberry, most persons regard as an adjunct to their Thanksgiving or Christmas dinner. Few think of it as a tonic provided by Mother Nature to cleanse and purify the system during the long winter months, when few fresh fruits are available. From the Arctic regions, southward, this fruit is greatly valued and appreciated. During the nightless summer days the Scandanavian peasants make it their business to gather the red berries and string the min long chains for drying for the winter season.

In Russia the berry is used in wine making, while in many foreign countries it serves for making poultices which are applied externally for the purpose of removing inflammation. Few ships leave winter ports during the winter months that are not supplied with a goodly stock of these berries.

The cranberry should indeed be more widely used, not alone on account of its medicinal properties, but because of its culinary possibilities which are more numerous than is generally supposed. Not only does it make excellent sauces, puddings, pies, etc., but it may be used for jams, syrups and vinegar.

Fresh and cooked fruits hold an unique place in the dietary. Too often fruit is considered as simply a luxury for occasional rather than daily use, but the judicious use of both fresh and preserved fruits means better health and satisfaction for each member of the family. If possible, fruit should be served for breakfast. Each fruit has a season at which it is at its best and cheapest, then it is that the house wife, with an eye to future needs, is desirous of storing up a supply against a day of scarcity.

Written by Mrs. A. G. M. Gilliss,
Centre Napan, N. B.

Sciatic Pains *from* Exhausted Nerves

SCIATICA or sciatic rheumatism is attended with pain and tenderness along the sciatic nerve in the hips and thighs, and indicates an exhausted condition of the nervous system.

Relief is sometimes obtained by external applications or the use of heat, but at the slightest provocation the distressing pains return and from time to time become more severe as the nervous system becomes more exhausted.

The only way to obtain actual cure is by a reconstruction of the wasted nerve cells, and this is best accomplished by Dr. Chase's Nerve Food. It need not cost you much to restore vigor to the nervous system, but it will take a little patience. particularly at first. After you have used a few boxes and got the building-up process established you will find improvements from day to day which will encourage you to keep up this treatment until the nervous system is completely restored.

Nervous disorders do not right themselves, but naturally, become more acute as the system becomes further exhausted. It is only wise to be warned by sleeplessness, headaches, neuralgic and sciatic pains and to take immediate action to restore the depleted nerves before paralysis, lacomotor ataxia or some form of helplessness is developed.

Dr. Chase's Nerve Food

50 cents a box—do not pay more—at all dealers or Edmanson, Bates & Co., Ltd., Toronto. On every box of the genuine you will find the portrait and signature of A. W. Chase, M.D., the famous Receipt Book author. 10

CLEAN HANDS

Mothers who wish their little onos to keep clean hands must set the example. Children are quick to notice other hands after their attention has been directed to their own.

I know a teacher who was very successful in inspiring her little pupils to keep their hands clean. She taught them to look upon their hands as wonderful and valuable tools that had been given them to do their work with. And that hands must be kept in good order just as tools must be kept in good order to do the things learned that soiled hands spoiled their work in school.

Dirty hands are not fit to touch clean food with.

Black flinger-nails are full of germs.

Sticky fingers ruin good books, and dirty hands should never be allowed to turn the pages of a coveted picture book.

A small scrub brush, a short orange wood stick, a little file and a small sized buffer at home will do much to awaken in the child a desire to keep the hands clean. If these litle instruments are given to him for his very own at an early age, they form just as fixed a habit as a toothbrush.

He learns to use them with neatness and dispatch and comes into the dining room promptly as well brushed and scrubbed and manicured as the grown-ups and just as proud of it.

INDIAN PUDDING WITH MERINGUE

Put one quart of fresh milk into a double boiler and when it reaches the scalding ponit sift in four tablespoonfuls of fine corn meal mixed with the same quantity of wheat flour. Stir thoroughly and cook two hours. When done, set off the stove and cool.

Add the yolks of four well-beaten eggs, a tablespoonful of butter and a teaspoonful of salt. Bake a delicate brown. Take from the oven, and when it has cooled slightly, spread with a meringue made from the whites of the eggs, beaten stiff with four tablespoonfuls of pulverized sugar. Use a wire whip or fork for making the meringue.

Set in the oven, which should be cool, and brown.

Farewell, oh luscious rhubarb pie,
From you we now must part;
Wen cannot put a fornight's sugar
All in a single tart.

HOW WE CAN DO WITH LESS SUGAR

In the daily menu and because of its low cost in the past, many persons have used sugar thoughtlessly, putting two teaspoonfuls or two lumps of sugar in coffee or tea, not being particular whether it was stirred until dissolved or not. This does not apply to the home tabel alone but when dining out. Use one teaspoonful and stir until all is dissolved, and if not sweet enough add a half teaspoonful more. Thy this and you will find it proves just as satisfactory.

When making puddings which call for hard sauce, where butter and sugar are the main ingredients, make a plainer sauce with very little butter and half the amount of sugar. It will be better for one's health; besides you are adding to the sugar supply of the world.

Instead of covering top and sides of the cake with icing to which nuts, fruit and flavoring have been added, ice only the top, or, better still, put the nuts on the inside of the cake and bake a nice brown and do without the icing, thereby saving sugar, white of egg, labor, and the cake is just as good. Many times one has bad luck, as some call it, and the icing is sticky and there is more on the knife than on the piece of cake, and the result is that it is wasted.

If for the next six months every cake that is baked would be made without icing think of the sugar saved!

If layer cake is made put it together with homemade jelly, jam or marmalade; and if a change is wanted add a few finely chopped nuts to the jam; and if for any reason one wishes to decorate the cake spread the top and sides thinly with red jelly and sprinkle with a little grated cocoanut or finely sliced blanched almonds.

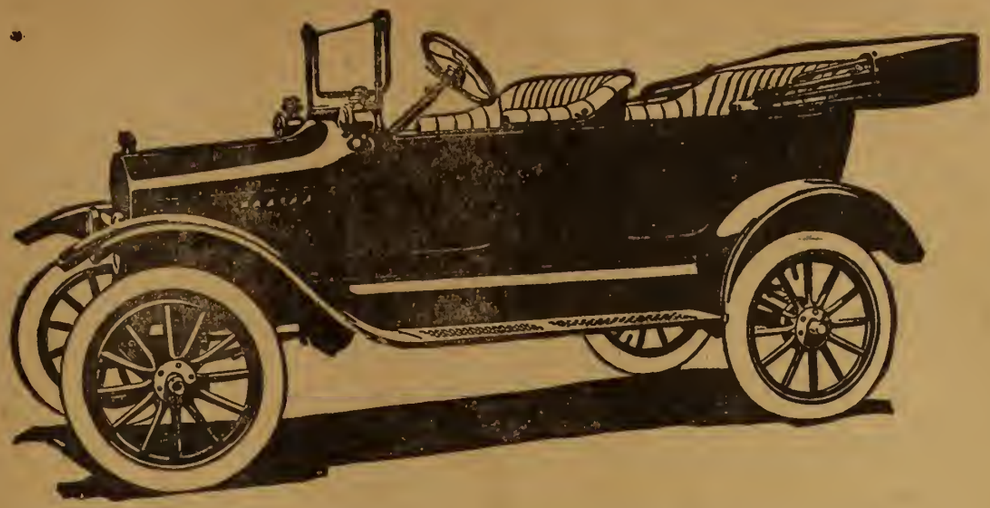
Why not make cookies for a change? It is a little more work, but almost everyone enjoys homemade cookies. Some can be made with half the amount of sugar, using molasses or honey.

THE CLEANING MANIA

A kind of insanity on the subject of cleanliness from the standpoint of much scrubbing, shining, and polishing, is common among housekeepers. But in real value conspicuous cleanliness does not weigh nearly as much as other less noticeable things. Handwashing, for instance, for all the family, is far more important than dusting. That the children should learn to keep clean hands means ceaseless work on the part of the mother, for probably no child ever lived who took kindly to much washing.

But hands are used for so many purposes that they come constantly into contact with things clean and unclean. A family where the children are taught and carefully watched to see that they eat with clean hands, handle foods with clean hands, and keep unclean fingers away from their mouths at all times, is getting far better training and is in all essentials a cleaner family than one in which these details are overlooked, but which maintains the furniture in a high state of polish. I can hardly emphasize this matter of hand-washing enough when I think of habits common enough among those we employ as house-help, of coming from the toilet and, without even a pretense at cleaning, going to cut bread, or, after nose-wiping, going right on with mixing of dough. It is exceedingly unpleasant to talk of such things, and so such subjects are seldom mentioned, but it is through the elimination of these and not upon shining that the real sort of cleanliness depends!

And with Summer on the way, one last word. Never let go your war upon flies, vermin, and pests of all kinds. No house can be clean that harbors them. A score of flies in a kitchen will hardly be noticed, but they have more possibilities of filth than dust and litter.

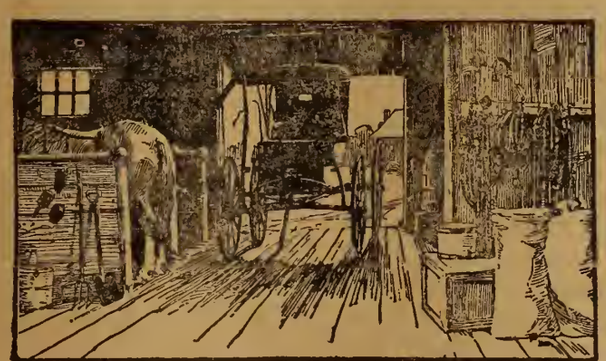


A Ford Car Takes the Place of all These Things

WHEN you own a Ford you can do away with many articles that are a source of continuous expense to the man who still drives a horse. For instance, not only your driving-horse and buggy, but the single harness, blankets, whips, currycombs, brushes, horse-shoes, pitch-forks, feed-bins, etc.

In their place you have a speedy, dependable, dignified, roomy Ford Car—complete in itself. It is vastly superior to the narrow, cramped buggy that travels so slowly. And when a Ford is standing idle it does not eat three meals a day, and it requires no "looking after."

A Ford will save you time, trouble, and money. It is the utility car for the busy farmer and his family.



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To Keep Underwear from wearing out under the arm, sew a piece of cloth the shape of a dress shield under the arm.

When Discarding Children's Hose, save all the good heels; they can be used to patch other heels that have holes too large to darn.

Save Your Small Pieces of Toilet Soap, cut them up fine, put on to boil in cold water until all the soap is dissolved, then stir in enough corn meal to make it thick. Pour into tins to cool; when cold, cut into cakes.

If You Have a Bottle that keeps liquids hot or cold, use it to save fuel. Scald the bottle with hot water, pour the food—such as soup—to be cooked, after it has been heated to the boiling point, into the bottle, closing it tightly. Leave the food in the bottle until cooked and ready to use.

One Quart of Vinegar Can Make Two by putting the two half-quarts into quart jars, filling up the jars with boiling water, screwing on the tops and letting stand for a few days. At the end of that time there will be two quarts of vinegar apparently as strong as the first quart.

Fat May be Saved and doughnuts made more digestible by dipping them in boiling water immediately after removing from the hot fat. Do not let them remain in the water a second, but place them on the draining rack in the usual way. When the water cools you will have several ounces of good fat.

Most Satisfactory Shoe Trees, which will keep your shoes in good shape, may be made by cutting off the feet of an old pair of stockings just above the ankles and packing the feet tightly with shredded newspaper. When stuffed, sew the top of each together.

The Safest Place For Your Money

is to have it invested in Victory Bonds. Everything else in Canada would have to fail before Victory Bonds could fail. It is the Premier Government Security.

So, you see, if you have $50 or more not drawing interest, or drawing only 3% interest, you can't do better than invest it in Victory Bonds. The bond will pay you 5¾% on your money, and you can always sell it if you need to.

You can buy Victory Bonds at the folowing places:

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INSECT PESTS AND SOME PLANT DISEASES

Everybody realizes that everything must be done during the coming year to increase production of staple articles of food, and one of the best means of conserving production is to control the insect pests and fungous diseases that prey upon the crops and destroy such a large percentage.

It is very important, that ample supplies of the neecssary chemicals be laid in early in the winter before the season arrives for their application. The reason for this is obvious, for during the winter the chemicals are cheaper and are more readily secured than in the spring when there is a larger demand for them.

The substances that every farmer should have on hand are **arsenate of lead, Paris green, copper sulphate or bluestone, unslaked lime or stone lime, unslaked lime, tobacco extract and insect powder.** During these war times arsenate of lead is much cheaper than Paris green and as a rule is to be preferred when a poisonous substance is to be applied, as for the control of potato beetle, codling moth, etc.

In the case of potatoes it is always advisable to use a combination insecticide and fungicide for the control of both beetle and blight, and three pounds of lead arsenate should be added to forty or fifty gallons of Bordeaux mixture solution.

Sucking insects such as plant lice and bugs of various kinds, are very common pests. With these arsenic or Paris green is of no value, but they can be killed by the application of soap solution or tobacco extract, or a combination of both. There is no better method of treating plant lice than by spraying the affected plants with one of these substances.

The chief remedy against plant diseases is Bordeaux mixture which is prepared by dissolving four pounds of bluestone in four or five gallons of water, and slaking four pounds of stone lime in a similar quantity of water, then pouring each of these solutions in turn, into a larger barrel containing thirty-five gallons of water.

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POINTS ON THE CULTIVATION OF SOME VEGETABLES MOST DIFFICULT TO GROW.

Cauliflower, although one of the most delicious vegetables, is one of the hardest to grow in many parts of Canada. It damps off easily in the hotbed, is often badly affected by root maggot and frequently does not head well. In raising plants, transplant them from the seed row, pot or flat to a distance of about two inches apart each way as soon as possible after the seed germinates. This permits a freer circulation of air between the plants and makes the danger of damping off much less. Root maggots are bad nearly every year in many places in Canada and often prevent practically all the plants from heading. Eggs are laid on the ground near the plant which soon hatch into maggots which eat into the roots and thus cut off the supply of sap. To prevent injury from these, a tar felt disc should be placed around each plant close to the ground at the time of planting. It will be too late otherwise. Full particulars in regard to the use of the disc can be obtained from the Department of Agriculture, Ottawa. If the first planting of cauliflower is a failure, a second planting should be made, as cauliflowers are much easier to grow in late than in earlier summer as the maggots are not so troublesome at that time and there is usually an abundant supply of moisture. If the soil in which cauliflowers are growing is dry, they will not head well, as they need lots of moisture and must be kept growing without a check from start to finish.

The onion is another rather difficult vegetable to grow. It requires a long season of growth and very often the seed is sown too late and if the summer is cool and wet the onions will not ripen and will run to thicknecks. The seed should be got in the ground as early as possible in the spring so that the onions will mature while the warm weather continues, thus ensuring a thorough ripening and curing of the bulbs. To hasten the development of bulbs, especially in places where the season is short, young plants are set out instead of the seed being planted. Onion sets will ensure good bulbs also where the warm season is short. Root maggots often do much harm in the onion plantation. Watering the rows every four or five days with hellebore and water in the proportion of two ounces of hellebore to one gallon of water while the insects are most troublesome will control them to a considerable extent.

Except in the warmest parts of Canada melons require considerable care to ensure the ripening of many of them. The warm season is too short. To overcome this, melons should be started in hotbeds and kept under glass until there are warm nights in June or even July. Melons require heat below and heat above, hence the necessity of keeping the soil warm by having a good bed of manure. They will not succeed in cold soil even if the air above ground is warm. Melons require a plentiful supply of moistrue in the soil to give the best results. Much watering, however, should be delayed until the ground is sufficiently warmed up so that heavy watering will not cool it too much.

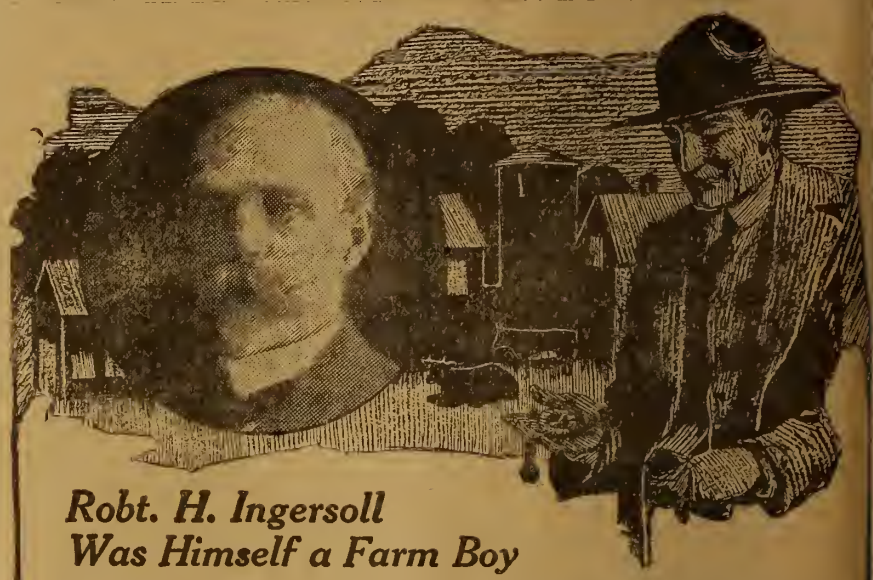
Brussels sprouts do not develop well in hot, dry weather and, unless the autumn is a long one without severe frost, they are not satisfactory. It is important, therefore, to plant varieties that will be most likely to develop where the season is short, and the dwarf ones have been found the most satisfactory.

TO-DAY AND EVERYDAY

You'll Like the Flavor

PROVING THE VALUE OF SUMMER PASTURE

A small field of summer pasture sown on the farm is very valuable in many ways. If the ordinary pastures are short and dried up during July and August, the piece sown to summer will tide the stock over the dry pasture period. If the ordinary pasture is good, then the summer mixture can



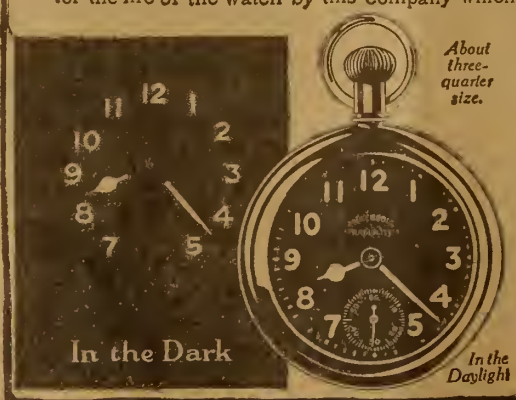
Robt. H. Ingersoll Was Himself a Farm Boy

THE inventor of the famous Ingersoll Watch was brought up on a farm. Many a night he did the chores and wondered what the time was. He hasn't forgotten that the farmer needs a reliable watch—one that will stand hard knocks and show the time around the barns in the dark just as well as in the fields by day.

Mr. Ingersoll has brought out a new watch. It is his greatest achievement. It shows the time in the dark as clear as day. Until you've carried this watch you can't imagine what a help and comfort it is. The

Ingersoll Radiolite

has real radium in the substance on the hands and figures which makes them glow in the dark like the filament in an electric bulb. And the glow is guaranteed for the life of the watch by this company which has made 50-million watches.



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be cut for hay or allowed to ripen as a crop. It is an excellent crop with which to seed down, especially when pastured or cut early, and may be sown after the regular spring seeding is completed.

Summer pasture mixtures were sown on a number of farms last year with good results, in connection with the Illustration County work being conducted by the Commission of Conservation in Dundas county, Ontario. On one man's farm five acres were sown as follows: one acre to oats and vetches, one acre to oats and peas, and three acres to a mixture of wheat, oats and barley. This field enabled the farmer to save for hay another five acre field, which gave a yield of 10 tons. The summer pasture grew so well, that when ready for use, it was fenced across and only half of it pastured. The two and one-half acres, however, provided the main pasture for 12 cows during July and most of August, and caused ao increase of 35 pounds per day in milk yield, which held up for more than a month while other pastures were short. The other half of the field yielded six loads of mixed feed cut green and made into hay. The field was seeded to clover and timothy, and the onset of the winter found it in splendid conditoin with a good catch of grass and clover.

Best results on this farm were obtained from oats and vetches, with wheat, oats and barley next, and oats and peas last. Plan now to try it this year; it means more feed.—F.C.N.

BIG FARMER-S MEETING AT LEW' ISVILLE

There will be held at Lewisville, June 19, a United Agricultural Societies picnic opening at 2 o'clock in the afternoon. Societies will consider procuring feed, flour, fertilizer, etc. for next year. Speakers invited are: Hon. J. F. Tweeddale, Miniister of Agriculture, Mr. J. D. McKenna, Editor "Maritime Farmer." Mr. Reek, Sec'y for Agriculture, Mr. MacLeod, Supt. Agricultural Societies, and others. No member of any Agricultural Society can afford to Miss this.

R.M. BYNON, Convener.

MR. CARVELL PROMISES CONCESSION FOR FARMERS

The Maritime Farmers has received the following letter from A. D. McCain of Florenceville, N. B., who with Mr. M. L. Anderson, Sackville, represented New Brunswick at the Ottawa Conference in regard to exemption for farmer's sons. The letter which speaks for itself is published in full:

Florenceville, N. B., May 17, 1918.

The Editor of the Maritime Farmer,
Sussex, N. B.

Dear Sir:—

As one of the representatives who were chosen at the special meeting or convention held at Fredericton some weeks ago, to meet the Government at Ottawa in connection with Mr. M. L. Anderson of Sackville, I might say that we met with very good success and that the Minister, the Hon. F. B. Carvell, assured us that the farmer's sons would be given every consideration; also that legislation should be passed exempting the widow's only son, who was a bonifide farmer. He also told us that he would endeavor to have exemption granted to farmer's sons during seeding time ending June 1st. I might say that to-day I am in receipt of a telegram from the Hon. F. B. Carvell in which he states we can have the farmer's sons exempted until June 15th, which would give them a full month, or ample time to have the seeding done.

I think the farmers should be very grateful to our representative in granting this concession, as this will enable them to have seeding all complete. If any possible further exemption can be granted he will be only too glad to grant same.

I think it would be well to have this report published in your paper so that the people in general would know just what has been done.

Thanking you in advance for this favor, I remain,

Yours sincerely,
(Sgd) A. D. McCAIN.

THE POULTRY .HOUSE WITH BATH ROOM

The dust bath deserves a place in successful poultry management, but at least seven out of ten poultry keepers neglect it. I saw a dust bath arrangement in a farm recently which excelled anything of the kind I had ever seen. Each pen of hens was given access through a slide door to an outside dust pen six feet long and three feet wide, the sides of which were of boards. The slope of the top was about one and one-half feet, and each pen was equipped with two covers, lifting to the back, the first of hen-wire, the second of glass frames and water tight. Each dust pen was built opposite an inside pen partition, and thus did duty for two pen flocks, only one flock however, being given entrance at a time. The dust pens had a sunny exposure. The material in which the hens burrowed was road dust, collected in open seasons. The poultry-keeper expressed the utmost satisfaction with the plan.

"We cannot give the hens the range." the poultrykeeper said, "and we believe that the yards are worse than worthless because contaminated so quickly. We use the outside dust pens pretty much the whole year round, planning to have the glass cover down during the stormy or exceptionally cold weather. The sunshine which the hens are able to enjoy we think of real value, besides, the benefit from the intimate contact with dirt. The dust bath, of course, is a very practical way of combating parasites. We clean the dust pens readily from the outside, and find the introduction of fresh dust a task involving little labor."

A common way of providing the dust bath is to keep a shallow box full of dry dirt in each pen. Another practice is to dump dirt in a corner. Each of these methods is more or less inefficient and slighted because bothersome to handle right. The cost of an outside dust pen is pretty sure to be forgotten in the new convenience. Using both the wire and glass covers and the slide door, it iis possible to handle the pen to meet a variety of conditions.

B. P.

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THE MILKING MACHINE: AN APPRECIATION.

By Paul Wing.

Never has the need for labor saving machinery for every agricultural purpose been so acute as it is to-day. The necessity for increased exports of food stuffs of all kinds to our Allies and our Armies overseas alone would have taxed sorely the productive ability of Canadian agriculturists in normal times.

But times are not normal. Abnormal exports during the last year or two have reduced our supplies of food in storage to a point far beyond that ever reached in recent years.

Two calls have come simultaneously from the Government; one for increased production of food stuffs; the other for more men. If the men come from the agricultural sections—and many of them must come from these sections, where are the food stuffs to come from?

Patently the men who are left must be enabled to increase their efficiency through the use of labor saving machinery. This is particularly true on dairy farms where the task of milking the cows makes man power or its equivalent absolutely necessary.

The agricultural man power of Canada has been drained by the response of Canada's farm boys to the call of the Motherland and of humanity. Higher wages in munition factories and shipyards have enticed many farm laborers away from the country. The ever present "lure of the city" to the farm hand and the boy growing up on the farm has taken its usual toll.

Of the available farm hands that remain to be had, many are of the wandering, discontented type; few are experienced milkers; still fewer will accept employment on farms where hand milking is in force if employment on other farms can be had. There is nothing unnatural about this dislike for hand milking on the part of the hired man, for I venture to say that no reader of these lines milks cows by hand because he likes to. In our boyhood days we milked because we had to, there was no cure for it.

The independent hired man is another thorn-in-the-flesh of the dairyman. How many men have you hired and put up with simply because you could hire no better—men who felt no responsibility toward their farm duties; men who seemed to watch for every opportunity to "get into town"; men who were more skilled at shirking than at working. How many times would you summarily have discharged such men as these but for the fact that you knew that without them you would be unable to even half-do the chores.

The solution of the dairyman's difficulties is labor saving machinery—machinery that will make him sufficiently independent of hired labor so that he will not have to put up with the inefficient and unwilling worker. Admittedly, the most irksome work on the dairy farm is the milking of cows by hand. It is the work that takes more time and undivided attention per year than any other work. It must be done regularly and thoroughly or an immediate decrease in milk flow results. Therefore the most important labor saving machine for the farmer who keeps eight or more cows, is a competent milking machine.

Not only is the milking machine needed for the purpose of eliminating the dairyman's labor difficulty and enabling him to pick and choose his men, but it is needed for economic reasons as well. The wages of hired men and the cost of feed have increased to such an extent that every possible means must be employed to reduce the production cost of milk.

The Milking Machine

From innumerable sources come the reports of milking machine users, stating that the milking machine has made them independent of hired help. In the first place the dairyman with a milking machine can afford to discharge incompetent or refractory help. He need not worry about getting the milking done until he can hire more competent men, for the milking machine will enable him to do alone, or with the assistance of his son, daughter or wife, what four or five men have been required to do by hand.

However, the dairyman must not mislead himself by assuming that any milking machine will solve his difficulties. Different milking machines differ as widely as different cows. There are thoroughbred milking machines just as there are thorughbred cows, and there are "scrubs" and "wasters" in the milking machine field just as there are "scrubs" and "wasters" in many a daiary. Don't take chances on cheap or inferior milking machines. When you determine to place a milking machine in your dairy, buy the recognized standard—buy a milking machine that milks in the natural manner, not one that is simply a milk pump. I shall have more to say later regarding the different types of milking machines.

Then again the milking machine converts milking from heart-breaking drudgery into a pleasant chore. For this reason good men are easier to get. The dairy farm which is equipped with a milking machine has no disadvantages over the general farm on which no cows are kept.

In point of actual economy, the milking machine is undoubtedly the least expensive of all farm implements to buy and maintain, for in the first place the milking machine is used twice daily, every day in the year, while most other farm machinery equipment of any size must lie idle for months at a time—take the mowing machine, the reaper, the seeder, the cultivator or the threshing machine. These machines are used for only a limited number of days, once a year, and during the balance of the year they lie idle. But the expense of depreciation and interest on the investment piles up just the same. The milking machine, on the contrary, earns its own way every day. It is a good deal like the big league ball player who plays in every game—he comes to bat so often that his batting average is bound to be a pretty good one.

On the average farm where milking machines are in use, it will be found that t he machines have enabled one man to do the work of three hand milkers and sometimes four. And one man with a milking machnie will do the milking in from one-half to two-thirds of the length of time taken by two, three or four men to do the milking by hand. This means, of course, that the workers can stay in the fields much longer tha never before and still finish the milking earlier. The milking can be started much later in the omrninig and still be finished in time for the milk train.

The milking machine also perimts of quicker handling of the milk. For example: While a double unit milking machine is milking tw ocows, the operator can carry the milk from the two previous cows to the milk house and there can weigh and cool it before returning to strip the first two cows and move the machine from the second two cows to the third. This abolishes th enecessity of allowing the milk to stand around in the barn or milk house and accumulate dirt and germs. The advantage of quicker cool-

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ing will substatially reduce the bacterial count.

The milking machine often increases milk flow. The reason for this is that its regular, uniform action has a soothing effect on the cow. It is a well known fact that even the most regular of hand milkers milk differently at different times. You see it is impossible even for the conscientious and experienced man to milk uniformly at all times. Then how much more likely is a milking macine to lack uniformity when careless and incompetent men must be employed.

On acocunt of this absolute uniformity and regularity of action, the use of the milking machine invariably lengthens the period of lactation. The effect of machine milking on the cow (which has already beeen dwelt on slightly) is to sooth and quiet her. It invariably makes nervous cows calmer and easier to handle. A great manp users of milking machines claim that they have saved diseased quarters. This, no doubt is due to the even, regular masage given to the teats between each two suprts of milk. This action is muc hlike that given by the sucking calf.

So-called "hard-milkers" hold no terrors for the milking machine. After the first two milkings they are converted into easy milkers, and frequently a cow that has built up a reputation as a boarder or waster, will develop into one o fthe best producers in the herd.

The prospective milking machine user need never have no fear of injuring his cows through the intelligent use of the milking machine, for milking machines are used on many of the highest class and most valuable pure bred record cows. Among other thoroughbred Canadian dairy farms on which milking machines are used are: Jos. Winter, London, Ont.; G. A. Brethin Norwood, Ont.; M. C. W. Kay, Sussex N. B.; L. A. Higins, Amherst, N. S.; G. E. Freeman, Amherst, N. S.; H. V. Dickson, Hammond River, N. B.

Milking machines are also used on the eight leading Dominion Experimental Farms. On two of these farms several types of milking machines have been used for about three years, and in view of the satisfactory service given by the machines on the Ottawa Farm and the Agassiz Farm, the Government recently placed its order with one of the leading manufacturers for six milking machine outfits for the other six farms mentioned.

Because they were introduced into that market first, milking machines have been in much wider use in the United States than in Canada up to the present, and many facts have been brought to light over there which are of unusaul interest to Canadian farmers and dairymen. These same facts have become self-evident to thousands of Canadians who have abandoned hand milking in favor of the milking machine. For that reason United States' experiences are worth stating in this article.

In the matter of cleanliness; obvious lythe effect of the competent milking machine will be to produce cleaner milk; I say "obviously" because it is certainly obvious that milk which does not come in contact with the stable air will be cleaner than milk which does. The experience of Mr. A. L. Grove, of Lewis Center, Ohio, demonstrates this fact. Mr. Grove attained something more than local fame by producing milk with the olwest bacterial coount of any shipped into Columbus, Ohio. The reward for the production of cleaner milk is better milk prices. The Walker-Gordon Farms, near Boston, sell their machine made milk for 25c. per quart, retail. They can never get enough to supply the demand. The Kelsey Ranch, at Lexington, Mass., sells its milk for the amazing figure of 40c. per quart. In no small measure their ability to procure this high price is due to the use of the milking machine and the production of absolutely clean milk.

Now you may that the savings and benefits from the milking machine, which I have mentioned, are largely problemical; that possibly a few dairymen can sell their milk for 25c. or 40c. per quart, but that no such market is open to you.

Posibly you are right, but even so the milking machine will be the greatest single factor in increasinig your dairy profits and in enabling you to survive, in spite of labor difficulties, high feed costs and every other difficulty to which the dairyman is subjected. For the milking machine will pay for itself in a remarkably short lnegth of time, without taking into considerationi any of the savings previously mentioned. Almost invariably it is posible to get along with one less hired man, and sometimes in moderate sized herds, it is posible to dispense with three or four hired men through the use of the milking machine. The savings of wages thus affected, even if only one man is dispensed with, will far more than pay for the best milker outfit in existence, in the course of a very few months. Superintendent John Livingstone, of Strathglass Farm, Port Chester, N. Y., told me himself that he has proven by actual records that milking by machine cost him approximately $130.00 per month less than milking by hand used to cost. At this rate he has saved the entire cost of his milking machine outfit nearly three times in one year.

The Right Milking Machine

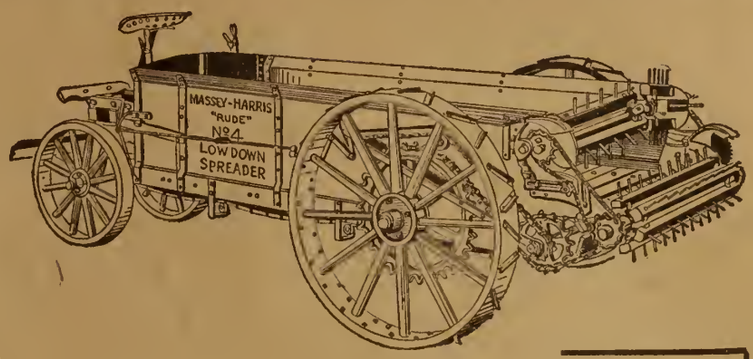
The prospective milking machine user must bear in mind that the present urgent need for labor saving machinery has brought out many makeshift milkinig machines.

Teh utmost care should be used in the selection of the milking machine, and only a machine should be purchased whic his a recognized standard.

When you investigate, get in touch

MASSEY-HARRIS SPREADER

Low Down Wide Spread



Here is a Spreader that is low-down, but not too low—plenty of clearance under the Frame.

It is a Wide-Spread Machine—spreading full seven feet wide, although the Box measures only 3½ feet.

Ample strength is secured by making the Frame of Steel—heavy 4-inch Channel Side Sills with Steel Cross Sills, forming the strongest Frame ever put on a Spreader.

The Simple Chain Drive does away with all Cogs, Clutches, and Springs, and when out of gear no parts of the machine are running to cause wear.

The Upper Beater is in two sections, set at an angle to spread the load out beyond the Wheels.

The Simple, Direct Drive—the Divided Beater and small size of same—the taper shape of the Bed—the Broad-Faced Wheels—the careful fitting of all parts—these combine to secure light draft.

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with the Government Experimnetal Farms' officials. You can certainly make no mistake in purchasing the machine which they are using on eight Experimental Farms, after having experimented with it on two farms ofr three years.

Be sure to buy from a manufacturer whose reputation is worth more to him thana few thousand dollars profit which he might be able to make by putting out a cheap and inferior milking machine to take advantage of the present urgent need of the dairyman.

THE PERIL OF CANADA

Hon. F. B. Carvell, in his speech to the House of Commons, on the need for swifter measures for enrolling men for the front suggested that very practical results might follow the sailing up the St. Lawrence of a German submarine. That was his way of reminding the province of Quebec that the reality of the fight to make the world safe for democracy only comes home to those who feel the teeth of the dogs of war. Not many of us have imaginations which can bridge the Atlantic. Even the wounded men who have come back to us do not carry to our minds complete conviction of the immensity of the struggle on which our future freedom depends.

We sometimes say that if Germany wins, Canada will be subjugated to Kaiser rule. Here and there the unthinking remark is heard that, under German rule, the worker could work no harder than he does now, and that government, even by an autocracy, such as they had in Germany before the war, would still be a more efficient government than the democracy that has developed on this continent, through the activity of Big Interests, and the indifference to their own concerns of the great majority of the people. Such talk is blind to the present facts, and careless of the future. Glance at a couple of the manifestations of the peace regime of military autocracy, outside such straight military affairs as the perpetual conscription of the youth of the nation for military service and the haughty and brutal superiority of the military caste.

When you arrived in a German city, before the war, you could not leave the railway station without giving an account of yourself to the ever-present policeman—whence you came and whither you would go. There was not quite the same system which distinguished the depotism of the Czar, across the Russian border; but to a citizen of a British country the restraint which he felt on entering a German city hung over him like a dark shadow out of which, at any time, he felt some sharp weapon of offence might fall.

There were seven million Socialist voters in Germany before the war. Liebnicht, their leader has long been in jail because he criticized the trickery of the Kaiser's men in provoking the war and dared to oppose the methods of barbarism which have characterized their conduct of the war. That, of course, was to have been expected in view of the sort of freedom of speech which the German citizen was permitted.

If you had attended a political meeting in Germany you would have noticed sitting on the platform a quiet-looking man, of a little different aspect from the working people and their friends who were come to hear their own affairs discussed. If a speaker criticized the Government strongly, or if the quiet-looking man interpreted what was said as likely to make the audience think too unkindly of their masters in Berlin, he would arise, lift up his hand for silence, and warn the speaker that if he persisted in that line of talk, the meeting would come to an end.

The speaker would be expected to explain himself; and most likely would modify his tone. But if, after further warning, he persisted in saying unpleasant things about the governing powers, the Kaiser's representative would rise once more, and declare the meeting closed. The audience would then disperse quietly, not daring to vent its resentment at the exercise of arbitrary authority.

Imagine that sort of thing in Canada. It is so long since the freedom of opinion was finally won in British countries that we have forgotten that liberty of speech has been bought at a great price. We have scarcely begun to recognize that it can only be preserved, at, perhaps a greater price. It took centuries of struggle against the exercise of just such authority as the German people accepted as a matter of course, to achieve our present freedom. The Stuarts asserted the divine right of kings—the very doctrine for whose revival throughout the world Europe has been deluged with blood, and against which forty thousand Canadian lives have already been laid down. We must not allow their sacrifice to result only in graves in Flanders and the death of freedom in Canada.

Even in the United States, Germans who had become Americans with the reservation of their German citizenship, have not scrupled to assert that one day the methods of their Fatherland would become supreme on this continent. The destruction of the ease with which we live among ourselves, each family untrammelled in workin out its own destiny, would be only one of the calamities which will follow a peace dictated by Germany at the mouth of a long-range gun. The more you follow out the ramifications of the German methods of domination, the more appalling they are.

. For liberty of utterance, which John Milton declared to be the greatest of all liberties, our fathers suffered much and for several generations. To save what they won, we must fight more, because, if we lose, the freedom wherewith we are free will perish from the earth for our time and, so far as can be seen, for the time of our children's children.

rwnm r-t i—shrdlu etaoin etaoinnn

"SAFETY FIRST" IN THE HANDLING OF DANGEROUS BULL

The bull I have will be six years old the coming spring and would be just delighted if he could get a favorable chance to punch a hole in the person who handles him.

I take a piece of tough hardwood board nine or ten inches wide and 13 or 14 inches long (length and width proportionate to size of the face), and then atke two strips of thick board, an inch and a quarter or inch and a half thick, cut as long as the board is wide for cleats. Through each cleat about three-fourths of an inch from the end I put a rivet or small bolt through the wide way. I then tack the cleats to the board even with the ends, and bore a hole through the cleats and board just below the rivet, then nail the cleats securely to the board. About two inches from the opposite edge of the board I bore two holes, each hole an inch or inch and a half to one side of the centre. All holes are made large enough to admit a cattle tie chain or a heavy dog chain, the size commonly sold for 50 cents. I then

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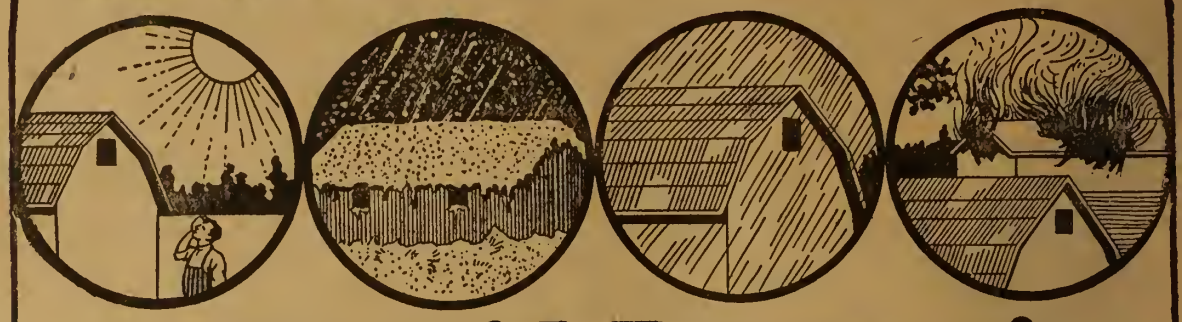
NEPONSET PAROID ROOFING

NEPONSET TWIN SHINGLES



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PROTECT your buildings with Paroid, the long life roofing, the asphalt-saturated ready roofing, the roofing with the label shown on the left.

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So many have the idea that *any* roll roofing is *Paroid*. That's a bad mistake to make—a costly error. Look for the roll with the Paroid label.

If you have new buildings to roof, or old ones that need re-roofing, NOW is the time for you to become acquainted with Paroid. One roof will convince you. You will join the ranks of Paroid enthusiasts.

Made in three colors—Grey; and Slate-surfaced Red and Green.

Use Neponset Twin Shingles for roofing residences.

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LARGE PLAYING FIELDS EXCELLENT SITUATION

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HEADMASTER

CALENDAR SENT ON APPLICATION

hold the board against the animal's head (having him securely fastened) so that his eyes come about the centre of the width of the board and get the measure of the length of chains necessary to pass through the holes in the cleats and over the horns, and then placing the chains, wire the ends together. I use another piece of chain on top of the head to hold the two just adjusted at the base of the horns, and another piece of chain to pass through the ring hole in the nose and up from the back side of the board through the holes near the lower edge and wire the ends together. Put the cleat side of the board next the face, it helps to make the blind more effective. Now you have a blind that will stay put. If the bull raises his head and projects his nose he can see all about him, but if he lowers his head to make a lunge at his caretaker his objective is hidden from him. I have had two or three vicious bulls, but not one of them ever undertook to attack me when the board war's on. I picket my bull around the buildings, daytimes, during the pasture season. I took a piece of 1¼ inch round iron one foot long to a machine shop and had a grove turned three-quarters of an inch wide and as deep as band iron is thick, and so that the top of the groove is one quarter of an inch from the end, and then had our country blacksmith point it, and put a collar and swivel on it. Fastened to this I had a 20-foot length of one quarter inch cable chain with a heavy swivel snap attached to the other end.

To set the picket pin I use a round iron bar that is a little larger than the picket pin, around which I cut a crease with cold chisel, that is the same distance from the end of bar as it is from the point of picket pin to the under side of the collar. When I settle the bar in the ground so that the crease is at the surface, it lets the pin into the ground so that the collar of the pin is at the surface, and the chain does not get wound around the head of of the pin, unless the grass is very tall. The pin is usually easily lifted out. As a part of the hitching apparatus, I have a piece of quarter-inch cable chain around the horns placed as follows: Put the chain around one horn, then slip the ends throuh a ring that is large enough to admit the picket chain to pass through also, then cross the ends and bring one end around the other horn and wire the ends together.

To hitch the bull pass the free end of picket chain up through the nose ring, and up between the board and nose chain, then through the ring on head chain, then down three or four inches and snap to a link. A bull hitched in this way will stay placed if the pin is not set in mud. The chain wears rather fast near the nose ring and it will be necessary to cut out a few links occasionally and reunite the chain

F. A. SNOW.

One of the most important meetings of sheep raising in Canada was held in Ottawa before the War Trade Board Wednesday, April 17th. It comprised a conference called by the War Trade Board of a Committee of Wool Growers appointed at the national convention of sheep raisers in Canada in February, with a committee of the manufacturers, wool dealers and wool pullers. The growers wer erepresented by Col. R. McEwen, London, Ont.; Capt. J. D. Wilson, Forres, Sask.; W. A. Dryden, Brooklin, Ont.; H. S. Allen, Lethbridge, Alta.; Stanley A. Logan, Amherst, N S.; and T. Reg. Arkell, Toronto, Ont. These growers are all members of the Canadian Co-operative Wool Growers, Limited, and Col. McEwen and Capt. J. D. Wilson are President and Vice-President respectively.

The manufacturers feared they may not have sufficient Australian and New Zealand wool allotted to them by the British Government to serve their purposes and consequently might require American and Canadian wool to meet their needs. At present American wool canot be exported to Canada except for the purpose of manufacture of American Government orders and they claim Canadian wool was most frequently shipped out of the country either on consignment or direct sales, without themselves being given an opportunity to bid upon it.

The Growers were eager to assist the manufacturers in any reasonable fashion that at the same time would insure Canadian wool being sold at a price equal to the American market for this product, and drew their attention strongly to the liklihood of an exodus of sheep from Canada to the United States should Canadian prices fall below the level of those in that country. They, therefore, pressed the desirability of an unrestricted market for Canadian wool and the advantages which would accrue to the Canadian sheepraiser if Canadian wool went into the United States without the present restrictions imposed by the latter country, whereby the Government exercises an option upon all imported wool at July 30th, 1917 prices less 5%. At the same time they were willing to present their wool to the Canadian manufacturer before export, for his purchase at the export price should he desire it.

The result of the conference is expressed in the following rsolution:

"That the Canadian War Trade Board request that the U. S. War Trade Board continue to allow the fre export of Canadian grown wools both fleece and pulled to the U. S. A. on the basis that grading is permitted in the same without exercising government import options and further to encourage the import of foreign free wools that the Canadian Government remove the emabrgo at present in effect which prohibits the re-export from Canada to the U. S. A. of foreign free wool now held or in future imported into Canada, the export of this to be under licence.

Hay-making a Pleasure

FROST & WOOD "CHAMPION" SIDE DELIVERY RAKE

Cleans up a wide swath and gives you a nice, even, loosely-piled windrow, through which the air can circulate and give you perfectly cured hay. The three tooth bars, arranged on a cylinder, give a perfect clean-up. No work about it —all you do is drive. This Rake is made of the highest grade materials, rigidly braced, and will handle the heaviest crop.

Frost & Wood Haymaking Implements are big labor savers and big crop sellers. You know your hay crop is the easiest spoiled of any if it isn't harvested right. Must be cut when ready. Must be properly cured. Must be got in on time. All these are easy, pleasant jobs if you use implements we have designed for the work —Frost & Wood Mowers, Rakes, Side Delivery Rakes, Tedders, and Hay Loaders.

FROST & WOOD "TIGER" AUTOMATIC DUMP RAKE

IT PAYS—THE F. & W. IS ALWAYS READY

Because a Rake looks a simple machine to make don't put up with cheap, inferior workmanship—get a Frost & Wood and save real money. Teeth of special quality, tempered steel, and arranged securely in the tooth bars. It is self-dumping, discharging the load automatically with only light pressure on the convenient foot lever. Made of steel, amply strong, clean working, the F. & W. Rake give a long lifetime of hard, faithful service.

Let us send you our new Haymaking Folder —very interesting. At our nearest agents, or write our nearest Branch today.

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An Engine for Every Need

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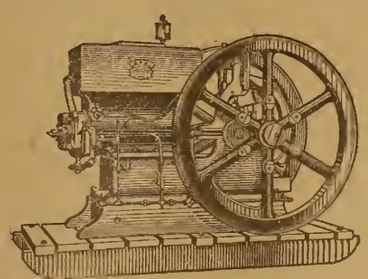

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ARSENATE OF LIME

During the last few years the Entomological Branch has been devoting increased attention to the study of insecticides, with special reference to the possibility of securing cheaper materials. One of the first results of this study consisted in a demonstration of the value of arsenate or lime or calcium arsenate as an insecticide. On account of the low cost as compared with the cost of other widely used insecticides, its use is recognized for many purposes at the present time. Its value has also been recognized for the same reason in the United States.

At the present time arsenate of lime which should be clearly distinguished from arsenite of lime, is only recommended as a spray for apple, potato and pera; it is not regarded as a safe insecticide for trees having tender foilage such as plum, cherry or peach. Nor do we recommend the use of arsenate of lime alone, but only in conjunction with lime, Bordeaux mixture, or sulphide sprays as described later. During the years 1915, 1916 and 1917 it has been used in Nova Scotia both commercially and experimentally in a variety of ways. Although the results from its use have not been uniformally satisfactory, this could not be expected on account of the lack of knowledge concerning the material. Nevertheless the satisfaction following its use has been such that orders for arsenate of lime in Nova Scotia in 1918 have exceeded those of all previous years combined; in fact, the orders for arsenate of lime in the Annapolis Valley exceed those for all other arsenical insecticides combined.

In discussing this poison it must be understood that unless otherwie stated we refer to the commercial dry material containing 40 per cent arsenic oxide in the form of tri-calcium arsenate and less than 1 per cent soluble arsenic, and so powdered that one pound of the dry material occupies eighty cubic inches. Although originally intended for use with Bordeaux mixture it was soon found, after the material had been introduced, to be the only poison that could be used safely with sulphide sprays, that is without being responsible for unsatisfactory results such as injury to foliage or the formation of undesirable chemical combinations.

The Action of Arsenate of Lime on Foliage When Used Alone

Many growers and investigators have used arsenate of lime alone, usually with disastrous results. The properties of this material are such that, when it is used alone, it causes a yellowing and often a burning of the foliage. The yellowing is generally caused by the formation of soluble arsenical compounds, and burning results from either an excessive use of the insecticide or certain weather conditions which abnormally hasten the breaking up of the material and the liberation of soluble arsenical compounds. Injury from the use of arsenate of lead alone is usually slight at first, increasing with each successive day for a week or more. The use of arsenate of lime alone on foliage is not recommended, although it has been used in some cases successfully on potatoes.

Used in conjunction with lime no damage such as burning of the foliage need he apprehended.

The Use of Arsenate of Lime with Lime

It has been found tnat where ten parts of either water-slaked or hydrat-d lime is used to one part of arsenate of lime, the material can be applied to apple and potato foliage without injury.

Arsenate of Lime Compared with Arsenate of Lead when used with Lime-Sulphur

The following comparisons of arsenate of lime and arsenate of lead with lime-sulphur may be drawn from three years experience with arsenate of lime in Nova Scotia: Arsenate of lime with lime-sulphur has nivariably given slightly better results in the control of fungous diseases than arsenate of lead with lime-sulphur. This is very possibly due to the fact that upwards of 35 per cent of the sulphur may be precipitated in the latter composition. Arsenate of lime with lime-sulphur has, in all experiments in Nova Scotia, caused less leaf-burning or singeing than the arsenate of lead with lime-sulphur spray. This is on account of the larger quantity of soluble arsenic in the latter combination.

Arsenate of lime with lime-sulphur has caused noticeable yellowing of the leaves more often than the arsenate of lead with lime-sulphur combination. The underlying causes of the yellowing of the leaves would appear to vary and they are now being investigated. It may be noted, however, that only here and there an isolated grower reported yellowing from the third spray (that applied immediately after the blossoms), while possibly 5 per cent of those who used lime-sulphur with arsenate of lime for the

ECONOMY
applied with a
Paint Brush

The great national duty today is to "conserve." It's a duty you owe yourself as well as your country. A duty just as applicable to a house, barn, farm implement, or wagon, as it is to the things you eat and wear. Buildings, in fact, show so tremendous an increase in cost, that the importance of *keeping them protected* is apparent to all who know how steel, wood, brick and cement have jumped in price. And the cheapest protection you can give a building is the kind you apply with a brush—PAINT. For true protection, scorn the ineffectual, cheap paints. Use only

B-H "ENGLISH" PAINT

70% Pure White Lead (Brandram's Genuine B.B.)
30% Pure White Zinc
100% Pure Paint

the kind we guarantee to possess as its important basis the above correct formula.

That formula, printed on every can, and guaranteed over our President's signature, commits us to this standard. High in cost as white lead has become, we *must* use it in the same proportion as heretofore. To use less of it, would necessitate the removal of the guarantee from our cans—and to do that would injure the reputation that these paints have acquired by reason of their superior ingredients. It is by using pure white lead and pure white zinc in such liberal quantities that we have been able to produce a paint that truly excels in covering capacity—and that stands the severe "climate test" of Canada in a way that spells true economy for all who use it.

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For Interior Varnishing

The name "China-Lac" suggests a china-like finish—and that is just the kind of finish you get from the use of China-Lac—the perfect varnish stain. Being transparent, it preserves the "grain-beauty" of the natural wood—at the same time giving splendid color effects. Easy to apply—not affected by either hot or cold water.

For Staining the Roof

Our "Anchor" Brand Shingle Stains are especially prepared to preserve wood from decay. Easy to apply—on rough surfaces they give a better effect than paint. Shingles may be dipped or brushed on. Come in 19 different colors.

For Plaster Ceilings and Walls

Use Fresconette—a flat tone oil paint. Fresconette comes in a variety of shades. It is absolutely sanitary, for it may be cleaned with a damp cloth or thoroughly washed at will.

For Varnishing a Floor

Our "FLOORLUSTRE" finishes a floor with a lustrous coating of the most durable enamel. Will stand hardest wear—will not show scratches. Excellent for interior floors. For Porch Floors, Ceilings, Posts, etc., where surface is exposed to the weather, use B-H Porch Floor Paints.

Imperial Barn Paint affords a convenient protection for barn and outbuildings, made of good material, covers well, dries hard, goes furthest and lasts longest.

BRANDRAM-HENDERSON LIMITED

MONTREAL HALIFAX ST JOHN TORONTO WINNIPEG CALGARY EDMONTON VANCOUVER

fourth spray (the spray applied two weeks after the blossoms) reported yellowing..

The type of yellowing that is due to arsenical injury can be easily eliminated by adding either five pounds of water-slaked or hydrated lime to each 40 gallons of the lime-sulphur with arsenate of lime combination when used for the sprays after the blossoms. So far as our observations go, the addition of lime to the third spray (the spray immediately after the blossoms) is only necessary in orchards where the trees are subject to yellowing on account of the variety of apple or the treatment of the orchard. Lime sulphur is not advocated by us for the spray two weeks after the blossoms, but where it is used as a fungicide to add five pounds of water-slaked or hydrated lime to prevent the liberation of soluble arsenic and the yellowing of the leaves.

The trees sprayed with the arsenate of lime with lime-sulphur combination have in all the experiments carried on by us for three years given more apples than those sprayed with the lime-sulphur and arsenate of lead combination.

In poisoning value arsenic in the form of arsenate of lime (with lime sulphur) is fully equivalent to an equal quantity of arsenic in the form of arsenate of lead.

The arsenate of lime with lime-sulphur combination is much more easily and thoroughly agitated than the arsenate of lead with lime sulphur combination on account of its physical properties and freedom from lead sulphide or "sludge."

Arsenate of lime in its convenient form may be more easily and occurately weighed and added to the spray, and it may also be stored more safely than paste arsenate of lead.

Arsenic in the form of arsenate of lime is less than 60 per cent of the price of arsenate of lead in the paste form according to the prices in Nova Scotia in 1918.

The Use of Arsenate of Lime With Sulphide Sprays.

Arsenate of lime is the only poison on the market that can be used with sulphide sprays, such as lime sulphur, barium tetra-sulphide and sodium sulphides, such as "Soluble Sulphur" and "Sulfocide," without such chemical change taking place between the sulphide and the poison as would result in injury to foliage. When acid (hydrogen) or standard lead arsenate is added to lime-sulphur a certain amount of double decomposition occurs resulting in the formation of lead sulphide and crude arsenate of lime, five per cent of which is soluble arsenic. This reaction may precipitate as much as 35 per cent of the sulphur from the solution as lead sulphide, the black "sludge" with which the orchardist is familiar. Arsenate of lime, on the other hand, does not cause any perceptible decomposition or change in the sulphide composition and the standard brands contain much less than one per cent of soluble arsenic. The presence of lime sulphur in the spray prevents the formation of soluble arsenic compounds from arsenate of lime.

With sodium sulphide solutions, such as "Soluble Sulphur" and "Sulfocide," arsenate of lime is the only commercial poison trat can be used without damage to foliage resulting from the formtion of soluble arsenical compounds.

On account of the apparent increase in the toxic value of arsenicals that results from the presence of sodium salts, it has been found desirable to decrease the amount of arsenate of lime used with sulphide sprays to the proportion of one-half pound of arsenate of lime to forty gallons. It has been found that the sodium sulphide solutions do not adequately protect the arsenate of lime against air and that in order to eliminate yellowing where the sodium sulphide with arsenate of lime combination is used for the four sprays, 10 pounds of hydrated or water-slaked lime must be added to each 40 gallons, although it may be tically eliminated by using five pounds of lime to each 40 gallons in an orchard that was not well-cared for.

The Use of Arsenate of Lime with Bordeaux Mixture

Arsenate of lime has given the best of satisfaction and no leaf injury when used as a spray for the apple in conjunction with Bordeaux mixture made according to the various formulae. It would appear that on account of its adhesive qualities arsenate of lead assists the fungicidal action of Bordeaux mixture more than arsenate of lime. On the other hand, the difference in cost and greater convenience are both in favour of arsenate of lime.

Formulae for use of Arsenate of Lime

As a potato spray:—

Arsenate of lime: 1½ pounds.
Bordeaux mixture: 40 gallons.

As an apply spray; The following proportions are practically equivalent on account of the effect of the fungicides on the action of the poisons:—

With Bordeaux mixture: 1 pound of arsenate of lime to 40 gallons.

With lime sulphur: ¾ pound of arsenate of lime to 40 gallons, adding 5 pounds of hydrated or water-slaked lime to the two sprays applied after the blossoms.

With "Soluble Sulphur" and Sulfocide": ½ pound of arsenate of lime to 40 gallons, adding 10 pounds of hydrated or water-slaked lime to each spray.

Cost of Arsenate of Lime Compared With Other Poisons.

When the cost of arsenic is taken in to consideration arsenate of soda is the only arsenical insecticide that approaches in any degree arsenate of lime in cost as a potato poison.. Paris green and arsenate of lead are at the present time costing about two-thirds more than arsenate of lime while arsenite of zinc is costing about one-third more.

Arsenate of lime when it is to be used with Bordeaux mixture may be manufactured at home by dissolving nine-tenths of a pound of arsenate of soda (65 per cent arsenic oxide) in water and using all the solution, which would be about two quarts, to slake enough lime for forty gallons of Bordeaux mixture. Whether this material has any advantages over that made by adding the arsenate of soda solution to the completed Bordeaux mixture is questionable.

The home manufacture of arsenate of lime for use with sulphide sprays is not advised at the present time as the difference in cost between the home and factory made material is usually slight and is not always in favour of the home-made.

A first-class arsenate of lime is rather a hard material to make, even in a well equipped laboratory or factory, as is shown by the fact that there are now on the market some brands of arsenate of lime that are very low in arsenic, are coarse and gritty and in which the percentage of soluble arsenic is too high for safety when used with sulphide sprays. These materials are being sold for only a few cents less than well-manufactured articles containing twice the amount of arsenic. It is feared that all makes of arsenate of lime will suffer from the trouble that must follow the use of this material when combined with other sprays than Bordeaux mixture.

Buyers, in order to protect themselves, can ask a guarantee of less than one per cent of water soluble arsenic in addition to a guarartee of the arsenic content and the form of the arsenic content, which should be tri-calcium arsenate. Also, if they desire a guarantee of fineness, they may stipulate that one pound of arsenate of lime shall occupy not less than 70 to 90 cubic inches of space. We would advise buyers to be most careful in ordering arsenats of lime for use with sulphide solutions. And again we would impress upon growers the fact that it is important to distinguish between arsenate of lime or calcium arsenate, to which material this circular refers, and arsenite of lime or calcium arsenite which is a different material requiring further investigation.

Observe the condition of the low-lying parts of the farm; if water stands here and there, plan to get it off. To begin with, open up water-furrows and surface drains. Plan to do some tile draining if you can.

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War Service is Demonstrating McLaughlin Efficiency

FOR real service under adverse conditions the McLaughlin has won an enviable reputation.

This reputation is the result of a continuous effort to make better cars.

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Canada's Standard Car

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OSHAWA, ONTARIO

No. 516277, M. T. C. A. S. C.
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Canadian Forestry Corps
B. E. F. France
10/12/17

The McLaughlin Carriage Co., Limited.
OSHAWA, ONT., CANADA

Gentlemen:

I arrived in France, April, 1917, with one of your cars (Model D45 Touring). Up to now it has covered over 18,000 miles over all conditions of roads, some so bad one would never think of taking a car in private use.

It is only fair to you and your car that I should tell you that up to now it has given no trouble nor has it had any replacements except one plug and the carbon removed. The oil we are getting not always the best.

This statement is correct and will bear any investigation. Have had such pleasure with the car, compared with others, suggested it to me that I should write you this note, which may be of some use.

Yours sincerely,
CHAS. P. BAILEY,
a/c. Corporal.

This letter and photograph is a copy made from the original sent from somewhere behind the lines.

LOCAL SHOW ROOMS

SEE THE McLAUGHLIN LINE AT THE LOCAL SHOW ROOMS

Getting the Most Out of your Team

Make their work easier. They are faithful friends and deserve the best treatment.

MICA AXLE GREASE

"Use half as much as any other"

Lightens the load. The mica forms a smooth, hard surface on the spindles and the grease keeps it there. Mica Grease gives the effect of roller bearings and reduces unnecessary strain on your team.

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Is the best harness life insurance on the market. It overcomes the worst enemies of leather — water and dirt. Leaves your harness soft, pliable and waterproof. A pure mineral oil free from acids and cannot injure the leather.

Sold in standard sized packages by live dealers everywhere.

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BRANCHES IN ALL CITIES

MARKETS.

CHARLOTTETOWN

Beef, Small, 8c to 26c; carcass, 14c to 18c.
Veal, Small, 12c to 25c; carcass, 12c to 20c.
Hogs, Selects, 22½c—usual disct. for light and heavy.
Lamb—none.
Mutton, 1*c to 20c, (Carcass)
Beef Hides, 10c.
Sheep Skins, $3.50 to $5.00.
Calf Skins, 20c.
Potatoes, 45c to 55c.
Carrots, None.
Turnips, 20c.
Parsnips, None.
Oats, 85c to $1.00 bush.
Cornmeal, $4.25 per bag.
Bran, $2.20 to $2.30 bag.
Oatmeal, $6.50 bag.
Middlings No. 1, $2.50 to $2.60 bag.
Cotton Seed Meal,—None.
Oil Cake, $3.75 to $4.25.
Buckwheat—None.
Ontario Flour, $11.85 to $12.25 as to grade.
Manitoba Flour, $12.75 to $13.25 as to grade.
Chickens—None.
Fowl—None.
Turkeys—None.
Geese—None.
Butter, Creamery, 46c to 48c wholesale; 50c to 52c Retail.
Butter, Dairy, 40c to 50c, as to grade.
Cheese, 23½ to 24c.
Hay, loose, 95c to $1.05 per 100 lbs.
Hay, pressed, $1.00 to $1.10 per 100 lbs.
Straw, pressed, 70c to 85c per lb.
Eggs lower today at 34c. This is a drop of two cents this week.

MONTREAL

Country Produce

Conditions in the eastern markets for eggs of late have been sowewhat perplexing. Several of the large operators reported that they had decided not to put eggs in the coolers above a cost of 36c. f.o.b. country points, and a number of dealers claimed this was having a bearing on prices in the country. Montreal dealers in some cases have also decided not to pay over 35c to storekeepers and 36c to gatherers f.o.b. cases returnable for this week's shipments. There was no important change in the condition of the local market, prices being maintained with a steady trade passing in a wholesale jobbing way, and the market on the whole was fairly active. The receipts today were 2,532 cases, as compared with 2,872 for the same day last week, and 3,635 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

Selected Stocks.....44c to 45c
No. 1 stock.....00 to 42c
No. 2 stock.....38c to 39c

The feature of the past week in the poultry market was the large increase in receipts of hens, and as a result of these prices in some of the western markets declined 2c per lb. A few more old roosters have been arriving, but otherwise there is no important change in the situation. Frozen poultry continues to move into consumption freely at full prices. Reports to hand point to an early start having been made this spring in breeding operations, and while the number of chicks hatched may not come up to former years, prospects are bright for earlier laying next fall and winter. Reports on fertility are good for Ontario and the West, and in British Columbia the chicks are reported to be thriving on a smaller grain and heavier clover ration. Earlier and better chicks seem to be the farmers' objective this year.

There were no new developments in the condition of the market for maple product today. The feeling remains very firm with a steady demand for supplies, of which the offerings are small on spot, and buyers in some cases find it difficult to fill their requirements, and especially so of small packages. A few lots of maple syrup in 15 to 20-gallon barrels are offering and selling at $1.80 per gallon, five gallon tins at $1.85 per gallon, while one gallon tins are scarce at $2 to$2.10 and 8½ lb. tins at $1.50. The tone of the market for maple sugar is also firm with a fair trade passing in a wholesale jobbing way at 22c to 23c per lb.

The market for potatoes was without any new feature to note today, prices being very firm with a continued good enquiry for car lots from outside sources, of which the offerings were somewhat limited, and in consequence of the volume of business was checked to some extent. Sales of car lots of Green Mountains were made at $1.55 to $1.60 per bag of 90 lbs. in bulk, reds at $1.45 to $1.50 including bags, and McIntyres at $1.35 to $1.40 ex track, while in a wholesale jobbing way Green Mountains sold at $1.80, reds at $1.70, and McIntyres at $1.60 per bag of 90 lbs. ex store.

The Local Flour Market

There was no change in the condition of the market for white flour, or its substitutes today, prices for all lines being steady with a fair trade passing for local and country account in small lots and the market in this respect was moderately active with sales of rye flour at $16.50 per barrel in bags; barley flour at $13.50; corn flour at $12; graham flour at 11.20 and rice flour at $9 per 100 lbs. put up in sacks of 220 lbs. The trade in spring wheat flour was quiet and prices were unchanged with car lots of Government standard grade for shipment to country points quoted at $10.95 per barrel in bags, f. o. b., cars, Montreal, and to city bakers at $11.05 per barrel delivered. The tone of the market for winter wheat flour remains firm but the demands for supplies is limited, and business is dull with broken lots quoted at $11.40 to $11.50 per barrel, in new cotton bags, and at $1.20 in second hand jute ex-store.

Mill Feed and Oats

A feature of the millfeed market has been the weaker feeling in pure grain moullie, and prices have declined at $3 per ton, with sales of broken lots at $73 per ton, including bags. The tone of the market for other lines of feed has ruled steady, and prices are unchanaged with a fair amount of business passing, and sales of bran were made at $35 and shorts at $40 per ton, including bags. There were no new developments in the market for rolled oats, prices being steady, but the demand is still somewhat limited and trade is quiet with sales of standard grades in broken lots at $5.15 to $5.30 per bag in jute, and car lots were quoted at $4.85 to $5. A steady trade continues to be done in cornmeal, and prices were unchanged with sales of Golden grade at $6.25 to $6.40 per bag, and bolted at $4.50 to $4.75, delivered to the trade.

HOW REMODELING IMPROVED SEVERAL HEN HOUSES

Poultry are housed in many styles of houses. Some buildings are constructed according to the latest ideas of what poultry accommodation should be, but there are many in which con-

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¶ Assume nothing in a tire that you cannot see.

¶ It is easy to measure "Traction's" big corrugations, or "Special's" big "buttons," with any competitive anti-skid.

Dunlop Tires go Further and go Better.

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"SPECIAL" - "TRACTION"

Palmer's Summer Packs

JOHN PALMER CO. Ltd MOOSE HEAD BRAND FREDERICTON N.B.

are sometimes called plough shoes or harvest shoes because they are especially designed for wear in the ploughing and harvesting seasons.

You will not be troubled with tired, aching feet after doing a hard day's work in Palmer's Summer Packs, because they are light in weight, durable, roomy, comfortable and waterproof.

Ask your dealer for a pair of these. "Moose Head Brand" shown above is stamped on every pair.

JOHN PALMER CO., LTD.
FREDERICTON, N.B., CANADA. 34

Farmers—Bank Here By Mail

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We understand the farmer's problems and gladly assist him in every way possible.

We will welcome your account.

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7A

ditoins are such that hens or pullets cannot be induced to lay until the warm rays of the spring sun take the cold, clammy dampness out of the atmosphere. The pen may be well constructed from a contractor's viewpoint. A good foundation, double boarded and papered walls, with windows and doors well fitted may keep out the wind. A ventilator in the roof may be installed with good intentions, but yet the pen is damp and birds may refuse to lay. They mope around during the day, and colds, roup and other diseases are common.

It is not necessary that the pen be particularly warm if it is dry and free from drafts. However, unless there is sufficient ventilation the moisture from the breath of the birds condenses on the walls and gives a clammy feelin the hen-house. It may be possible to slightly change the construction of the present house so that conditions will more nearly conform with what is esential in a winter laying pen.

A poultry house which gives good results is built of one thickness of boards with cracks battened, except on the north side where it is advisable to use two thicknesses of lumber and one of paper. The front can be low and open, with a window facing south west or west. If the walls are six or seven feet high, one-third of the side facing south should contain glass, and one-thord cotton. This gives light and ventilation without a draft. Even when a gale is blowing no wind is felt inside the cotton. The air diffuses through and keeps the pen fresh. In a pen of this nature very little moisture will be seen ono the walls or roof during the coldest weather. The air is dry and the birds do not suffer as much as those in a warmer but damp pen.

It will only take a few hours' work to remodel some of the present henhouses to make them more nearly meet the requirements of the hen. Concrete examples will illustrate how a few changes are sometimes necessary to make the pen healthier for the bird to live in. One pen that was built in three compartments, each large enough to accommodate about forty hens, had considerable moisture on both the walls and the roof during the first winter. When building, the owner thought he was constructing a model hen house. It was double boarded on the north and had a shanty roof which gave plenty of space for the window in the south side. All through the winter the rays of the sun streamed into the pen, but it failed to rouse the birds into activity. They appeared mopy. The straw on the floor could not be kept dry, and the walls were drippngi with moisture at every mild spell. The birds were bred right, and were particularly well fed on a wide variety of feeds, but they failed to lay when eggs were high in price. The following winter there was the same trouble, until the begnining of January, when it was suggested that there was not sufficient ventilation in the pen. True, there were ventilators in the roof, but they did not seem to meet the requirements. It was advised that several of the large windows be removed and the openings covered with cotton. The objection was then raised that the pen would be too cold for the birds, as it was necessary that they be kept warm if they were expected to lay. However, he finally yielded to make the suggested alterations, and to close the openings in the roof which was allowing what warm air there was to escape. The weather set in particularly cold after the cotton front was put in, but the birds did not see mto mind it nearly so much as the previous cold spell when their house was tightly closed. No dampness appeared on the walls; the straw on the floor began to dry and the birds appeared to take a new lease of life. In fact, in less than two weeks after the change was made several had commenced layin. That was two years ago, and that poultryman has secured a fair percentage of eggs, when prices were high, since he remodeled his pen. Another instance comes to mind of a well-built, little poultry pen of sufficient size to accommodate from sixty to seventy birds. It was about half as wide as it was long, with the long side facing south. This was filled with windows, and really the pen looked ideal the fall it was built. However, no eggs were gathered that winter, nor the next, until warm weather. The owner was lamenting the fact that he had put so much money into his poultry house, when the suggestion was made that he substitute cotton for part of the glass and fill the gable of the pen with straw. This was done, and returns have been satisfactory ever since. On one farm the poultry was kept in a pen at one end of the stable. It was so constructed that very little light was available, but it had the advantage of always being warm. While the flock usually laid a few eggs during the winter, better results have been obtained since the birds were partitioned off by themselves and a large opening made in the wall for glass and cotton. Poultry will not stand dampness, but it is almost impossible to avoid it unless ventilation is given. It does not seem that this can be obtained satisfactorily through a ventilator in the roof; the curtain-front is a much more satisfactory means. It is not expensive and is easily put on. True, it collects dust, which has a tendency to clog the pores of the cotton and so keep out the air, but this can be remedied by occasionally cleaning the cotton. If your poultry house is damp and the cotton-front has not been tried as a remedy, it might pay to try it this winter.

A large orchard is seldom profitable on a large farm because it requires more care and attention than the farmers are willing to give it to make it really pay. The home orchard therefore should not be more than an acre or so of trees, just enough that the owner will prune, spray and look after the trees as he should. To make a large orchard really worth while requires a man well versed in horticulture and who can put his entire time and energy to the care of it. It is certainly not advisable to plant trees and then neglect them for they not only fail to give adequate returns, but they may become a menace to the other orchards of the neiighborhood as breeders of insects and diseases.

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Insist on "Bob Long" brand, and ask for Big 11—the big grey overalls—the cloth with the test.

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Look for these Nameplates when choosing a Bicycle. All of these well known lines are "C.C.M." Bicycles. 2-E

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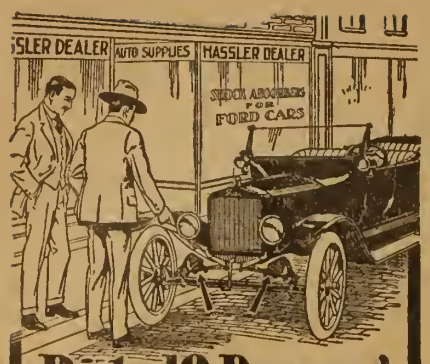

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PREVENT WHITE GRUB INJURY

White Grubs, which are the larvae of the well known May Beetles, or June bugs, will, it is expected, cause serious injuries in the province of Ontario, and possibly in other sections of Eastern Canada in 1918. This statement is based on our knowledge of the life-histories of these insects. The grubs feed naturally on the roots of grasses, so when sod land is ploughed up they are deprived of their usual food and readily attack such crops as corn, potatoes, strawberies, etc., if grown on the land. The ijurious species require three years to complete their life-cycles; in other words, a period of three years elapses from the time the eggs are laid until the grubs which hatch from the same are mature transform to the pupal state and appear as beetles. In 1917, the beetles were very abundant in certain districts in Eastern Canada, and eggs were deposited freely. The grubs hatching from these eggs did not develop much during the past year, but in 1918 the will grow more quickly and, being more voracious, will undoubtedly cause serious injury to the roots, etc., of various kinds of field crops. They will continue to feed throughout the growing season, and in the autumn of 1918 go deeper into the soil to pass the winter. In the spring of 1919 they will again come near to the surface, feed for a short period and then rest for a time preparatory to changing to the pupal state. It will be seen, therefore, that the second year in the life of the grub is the destructive one.

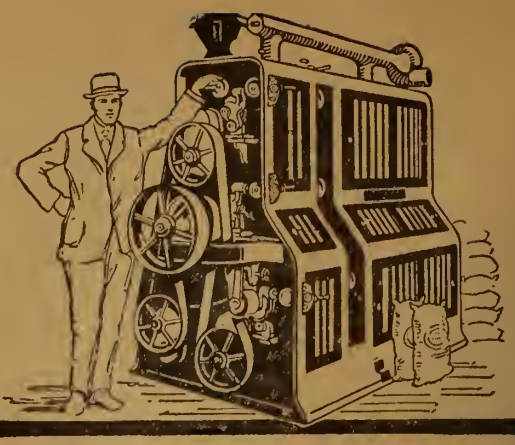
Methods to Prevent Serious Injury

Crops for infested land.—The female beetles lay their eggs in sod land, and also in land bearing such crops as timothy and the small grains. Suitable land nearset to groves or woods is favored by the beetles, which feed upon the foilage of the trees and then visit nearby fields to lay their eggs. In districts where the beetles were abundant in 1917, it is to be expected that such land is now more or less infested with the grubs, and it would therefore be unsafe in 1918 to plant on newly broken sod land, or on land grown to the above crops in 1917, any crop which would be attractive to the grubs. Crops particularly favored by white grubs are potatoes, corn and strawberries. In adition to these, other crops which are grown in wide rows, and timothy, are liable to injury. The safest crops to grow on land which is suspected of harboring grubs, are alfalfe, clover, or buckwheat. If it is not desirable to use infested land for alfalfa(clover, or buckwheat, the same may be again planted to timothy or small grains. Such crops as corn or potatoes should not be planted in 1918, on newly broken sod land in districts where the beetles were abundant in 1917. Corn or potatoes grown on land which grew the same crops in 1917, and which were kept cultivated and comparatively free of weeds during the flight of the beetles in May and June, 1917, will be reasonably safe from injury by white grubs in 1918.

Cultural and other Methods.—Under garden conditions, grubs are often turned up when the land is being dug or ploughed. As many of these as is possible should be removed by hand and destroyed. Under acre conditions there are unfortunately no practical measures known to destroy the grubs when they are known to be present in the land, and destroying crops. Late summer ploughing which brings many grubs to the surface, crushing numbers of them and exposing others to adverse weather conditions, is useful particuarly in years when grubs are changing to beetles.

Land known to be seriously infested and required for cropping in 1918 may be ploughed in late spring, thoroughly harrowed and planted to a late crop. Such late cultivation will attract to the fields, crows, blackbirds and other birds, which are known to feed readily upon these grubs, particularyl during their nesting period. Domestic fowls, such as chickens and turkeys, are also fond of white grubs and should be allowed the run of infested fields when these are being ploughed.

Limited areas may be practically freed of white grubs by turning in hogs, either in spring after the first of May, by which time the grubs will have come near to the surface, or in late summer when the crop has been removed. These animals are very fond of white grubs, and will root them out and devour them. An intestinal worm of hogs, called the giant thorn-headed worm, is known to pass one stage of its life-history within white grubs. The worm is introduced into the hogs when the latter devours the white grub. There is little danger of this happening, of course, if the hogs are allowed the run of the fields in which no such animals had been pastured within three years, as any worm infested grub in the land during such period will have matured and disappeared.



Grasp this Opportunity

Establish yourself in the milling business. Your country needs more flour. Thousands of new acres of wheat assure increased production. The local mill is coming back into its own.

Become the miller in your town. Operate a

Marvel

The Self Contained, Quick Process

Flour Mill

This simply constructed mill is your means of helping your country to take care of the increased wheat supply, of making better war flour at the lowest cost—and returning big profits to you. ***A Marvel Mill makes a better barrel of flour cheaper.*** It mills any grade or any grain and conforms to all government regulations.

Made in two sizes — 25 and 50 barrel capacities. No experience — no expensive buildings needed.

If you have as little as $3000 to invest you should get all the facts of this proposition at once.

The Canadian Fairbanks-Morse Co., Limited

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53

ACTIONS SPEAK LOUDER THAN WORDS

It is time to stop talking about speeding up the farm and get busy doing it. Immediate action for increased production of food is urgent. The farmers on the farms are carrying on the agriculture of this county. The farmers of each community know their local conditions and are the best judges as to what forces and equipment will be necessary to meet government requirements. By organizing and mobilizing their forces and working together to carry out a reasonable farming program, adapted to their section, they can accomplish wonderful results. The purpose of the government and the province should be to co-operate with the farmers and back up their honest efforts by supplying necessary labor, capital and equipment, to insure the successful carrying out of the farming program adopted and ordered by the farmers themselves.

The only way to get increased crops is to plow and plant, and fight the weeds and other things also. Too much dependence is being placed in patriotism and exhortation and scolding.

The farmers are responding to the patriotic appeal as far as they can with family labor, but in order to hold hired labor they must be able to pay wages that will compete with the factories. The average farmer cannot sell crops grown with hired labor for less than they cost, because they have no capital to lose.

If the new meadows are thin, sow some clover and timothy when the frost is honey-combing the surface of the ground. Keep the cattle off; there isn't anything there for them to eat, and they punch the ground full of holes.

FARMERS AND BREEDERS

Who wish to keep their horses and cattle strong and healthy, should always have on hand a supply of

OMAZON

The Canadian medicinal stock food for Horses, Cattle, Sheep, Hogs and Poultry.

It will help to economize on feed and owing to its sovereign tonic and curative virtues will keep the stock strong, healthy and free from many ailments.

Order from your dealer. If he hasn't it in hand, he will be pleased to obtain it for you.

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G. C. Cossar, Prop. J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls, ranging from nine months to eighteen months old.
Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. S. Bloomfield Farm

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
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Elmwood Stock Farm

OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

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Shorthorn Cattle !

High grade registered stock for sale.

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CODY'S, - - - N. B.

GUERNSEY BULLS!

I offer for immediate sale, the Guernsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.
For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

LOOK ! THINK ! ACT !

Pigs are Pigs Now. What About Breeding Stock?

In Berkshires I have four boars and two sows, farrowed Sept. 25th, 1917. They are well grown and will dress 150 lbs. each in a month's time. They are worth too much for breeding purpose fo kill so will sell at $35.00 each if taken 1st of March also booking orders for young pigs, April and May litters, $8.00 each.

T. J. HAWKINS
"Lone Pine Farm" Stewiack, Col. Co., N. S.

FOR SALE

Best English Blue Orpingtons, beautiful rich blue birds, three dollars fifteen eggs ($3.00). Handsome Buttercups, prize matings, fine birds, $2.00 fifteen.

SARAH E. MOSES SMITH,
WOODWARDS COVE, - - N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.
For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

For Milk, Butter, Cheese, Veal, Holstein Cows stand supreme. If you try just one animal you will very soon want more. Write the
Holstein-Friesian Association
W. A. Clemons, Sec'y, St. George, Ont.

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

JERSEYS

Young Bull, solid color, dropped Sept. 1st, 17 Out of R.O.P. dam and by a noted sire—combining the blood of Golden Lad, Tormentor and Flying Fox.

SHORTHORN:—

Young Bull, all red, dropped March 17th, 1917, sired by first prize winner of his class at Halifax, 1915, and a grandson of the grand champ on out of a highly bred and good milking dam.

Two Heifer Calves, all red, out of splendid milking dams and by one of the best sons of "Stat ey Monarch." One dropped April 29th, 1917, the other Aug. 14th, 1917.

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

Maple Green Farm Holsteins

Just now we are offering some fresh calv d cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. butter in 7 days.
Herd sires in service. "Maple Grove Mercena Mercedes," No. 11727, the sire of our 26.54 lb. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter brother to our 25.05 lb. Jr 3 year old.
For particulars write

R. L. HICKS
Dalhousie Jct., - - N. B.

ROSEWARNE
S.C. White Leghorns

I am now booking orders for baby chicks and hatching eggs from my well known bred-to-lay strain. Chicks will be very scarce this spring, and there will be a wild scramble later on for supplies, so get your order in early and pick your date.

My cockerels and pullets, out of same matings as day-old chicks were sold from last season, swept the board at Halifax.

Send for prices and mating list.

ERNEST CRAZE
Port Williams, - - N. S.

GLENRANE STOCK FARM

We are offering some very fine pure bred registered calves from 2 weeks to 8 months old These calves are sired by "Homestead Hengerweld Rooker" ¾ brother to a 26 lb. jr. 3 yr. old. They will be sold reasonably if taken at once. We also have several litters of very fine York pigs.

ROBERT C. HICKS,
West Bathurst, - - - N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

BUTTER PARCHMENT
Maritime Farmer Office

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st. 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown. with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.
We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows: and ne ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. **Send for our BOOK o F BULLS.** A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, Hammond River, N. B.
HOLSTEIN CATTLE AND YORKSHIRE SWINE

WM. S. HARDING, PROP.

We rae all sold out of last years crop of calves. We are now offering some young bull calves sired by Sir Foforit Schuiling. Also a fine litter of young Yorkshire pigs.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple of bull calves fit to head the best herds in the provinces. Come and see them. We would be pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been hred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

Registered Jersey Heifer

We offer for sale the registered Jersey Heifer, "Pride of Rose Bank," 3 years old, milking sired by Foxhall's St. John O'Dreamwold, whose dam gave over 10,000 lbs. milk in a year. Also Peerless Incubator, Barred Rock and White Leghorn Cocks and Cockerels, which would exchange for Barred Rock Hens.

ORCHARD HILL FARM
Brown's Flats - N. B.

SPRINGVALE AYRSHIRES!

Our present offering is four bull calves eight to twelve months old all from heavy milking dams. One each from Rosalind and Nita, each a prize winner in the dairy tests Amherst F. S. Show over all breeds and grades.
Inspection invited.

FRED S. BLACK & SONS
AMHERST, N. S.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must he counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex, N. B.

FOR SALE—Onc Holstein Heifer Calf, 3 months old; one Holstein Bull, one year old. —ARTHUR E. FERGUSON, West Bathurst, N. B.

FOR SALE—Four pure bred 2-yeer-old Guernsey heifers Calve in June. Sired by a grandson, Dally Bloom. Also five young hulls.—T. D. BLAIKIE, Great Village, N. S.

WANTED—MARRIED COUPLE to go on farm outside of Boston. Man to work on farm, and woman to do the cooking. Apply to R. CORRITTE, P. O. Box 968, St. John, N. B.

FOR SALE—Registered Ayrshire bull, No. 48032. Dam 31884 C.R.R. Also several registered bull calves.—E. CHADDECOTT, Monkham's Farm, West Merigornish, Pictou Co., N. S.

EGGS FOR HATCHING from choice stock, Houdans, White Wyandottes and Rose Comb Brown Leghorns. Eggs $1.50 per setting. C. C. Sweeny, Lunenburg, N. B. Box 413.

LADIES WANTED—TO DO PLAIN and light sewing at home; whoel or spare time; good pay; work sent any distance. Charges pald. Send stamp for particulars. National Manufacturing Company, Montreal.

Percheron Stallion

Two-year-old stallion, pure bred and registered. A fine big boned promising young fellow. Sired by H. C. Jewett's "Gresham," who was never beaten as show animal in the Maritime Provinces.

ALBERT FLEMMING,
Truro, - - - N. S.

FOR SALE

Pure bred registered Percheron stallion, rising five years old. He is a first-class individual, a sure stock getter and will stand inspection anywhere. A bargain if taken at once.

A. S. HINGLEY,
Prince Str. House, Truro, N. S.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females. all ages.

McINTYRE BROS.
SUSSEX. - - N. B.

Eggs for Hatching

O. A. C. Bred to lay Barred Rocks, S. C. Rhode Island Reds and White Wyandotts. $1.00 per thirteen, $6.00 per hundred.

Breeder of Holstein Cattle, Chester White Seed Beans. Prize winners at Fredericton and Sussex Seed Fair.

N. W. EVELEIGH.
"The Orchards" - - Sussex, N. B.

Advertise in the FARMER

Central Onslow, N. S., April 18, 1918.
Editor Maritime Farmer,
Dear Sir:—

We find the Maritime Farmer a good medium in which to advertise live stock. It always brings results. Some of our recent sales are as follows:—A bull to Black River Agri. Society, Black River, C. B. Three cows to Le Moine Bros., North Sydney, C. B. A fine two year old heifer to C. E. Hamilton, Lower Truro, N. S.—this is the third heifer that Mr. Hamilton has purchased from us this winter. The last one is a graddaughter of Miss La Handa, a cow that is quite well known to Maritime Province stock men.

Mr. A. D. Parker, Walton, Hants Co., N. S., got a fine pair of sisters, a yearling and a calf that will make him a fine foundation for a pure bred herd. Mr. Parker has been using pure bred bulls for some time, but decided to go a step further and get some females. We predict success for Mr. Parker with these heifers.

Mr. C. J. Coch, Central New Annan, N. S., purchased a very fine bull calf that should do a lot of good in his district. Mr. R. H. Putnam, Lower Onslow, got a nice young bull. This is the fourth bull Mr. Putnam has purchased here. We also sold a promising bull calf to Wilson Loggie, Loggieville, N. B. Mr. W. B. Jackson, Scotch Lake, N B., gets a fine heifer calf, (shipping its dam, which is a heifer), its eight nearest dams average 100 lbs. milk in one day and 29.98 lbs. butter in 7 days in official test.

Mr. Hugh Armstrong, Granville Ferry, N. S., gets a nice heifer calf. Mr. L. L. Archibald, Middle Musquodoboit, N. S., gets a bull calf and a yearling heifer sired by Colony Canary Ragapple, the bull owned by the N. S. Agricultural College. Mr. Archibald lives in a valley that has been lately opened up by railroad and has decided to go into dairying.

We have still quite a few bulls and heifers of different ages to sell. We will sell nothing that we would not be willing to keep ourselves for breeding stock. They are all in real good breeding condition, not one off in condition in our stable.

SAMUEL DICKIE & SON.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B.

Ayrshire Oattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Newburn Hill Stock Farm

Our present offering is one pure hred Shorthorn Bull, 11 months of age, also a few Heifers from one to three years of age. All of good milking qualities.

Beef, Hay and Potatoes in car lots.
Choice Cultivated Strawberries a specialty

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
UPPER SACKVILLE, N. B.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
Truro, - - Nova Scotia

FARMS FOR SALE !

1. Desirable farm for sale, situated at Lower Gagetown, N. B., containing 100 acres or thereby, suitahle for growing all kinds of crops: there is a splendid orchard on the property, containing ahout 500 apple trecs of good commercial varieties.

The farm huildings are commodious and exceptionally good and there is ample water supply. Public wharf ahout one-half mile distant and railway runs through the property.

2. Farm with suitahle house and huildings, situated about 3 1-2 miles from Gagetown, extending to ahout three hundred acres, ahout one hundred of which is good cropping land, the halance containing a large quantity of valuahle pulp and firewood.

For further particulars apply to

JOHN MIEKLEJOHN, Agent
Crosser Farms, - Lower Gagetown, N. B.

FOR SALE !

We have for sale a breedy, growthy bunch of young Shorthorn bulls, different ages, most of them are bred very strongly along milking lines, yet they would be a credit to any bcef herd.
would be a credit to any beef herd.

We are booking orders for spring delivery of our large English Berkshire young pigs. Not the short chubby type, but the lengthy, growthy and large.

L. M. ANDERSON, Sackville, N. B.

Champion Registered Ayrshire Bull For Sale !

18 months old. Bred in the purple. Also one 10 months old. For R. O. P. records of dams and further particulars apply to

ARTHUR S. DENNIS,
"Willow Farm"
TELEPHONE 13-6 STEWIACKE, N. S.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.

QUALITY BRAND
Rabbitry and Poultry Yards
Amherst, Nova Scotia
E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal llving, price per pair..$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each. D. W. Young's stock, as good as money can huy.
White Leghorn 260 egg strain for hatching.....$2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching.....$4.00 per 15

We Guarantee Safe Delivery. Terms Cash with Order

STRAWBERRY PLANTS

We have an excellent stock of well grown plants. Such well-known and popular varieties as Arnouts, Senator Dunlaps, Wm. Bell, Dickle Sample and many others.

Send for price list.

JOHN N. CHUTE,
BERWICK, - - NOVA SCOTIA

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

EGGS FOR HATCHING !

Breed Standard bred poultry and more of it. Eggs or stock from every popular variety can be had through our Association.

Eggs from all heavy breeds such as Bramahs, Plymouth Rocks, Wyandottes, etc., $2.00 for 15 eggs.

Eggs from the lighter breeds such as Leghorns, Minorcas and Black Spanish, etc., $1.50 for 15 eggs.

Write us your Poultry wants.

Cumberland Co. Poultry & Pet Stock Association
E. F. McKIM, Secretary
Amherst - - N. S.

S. C. W. LEGHORNS.

At Fredericton Show 1918, 1st pen, 1st pullet, 2nd cock, 2nd cockerel, 1st pen headed by 1st cock at Sherbrooke, Quebec, 1917.

WHITE WYANDOTTES

At Fredericton Show 1918, 1st pen and silver cup, 1st cockerel in class of 15.

15 Eggs—$2.00.

LLOYD B. JOHNSTON
NASKWAAKSIS, - - N. B.

FOR SALE!

Present offering, one Bull Calf.

P. R. L. FAIRWEATHER,
Rothesay - - - N. B.

Eggs Half Price !

For the balance of the season I will sell eggs from my B rred Rocks, White Wyandottes, S. C. R. I. Reds and S. C. White Leghorns at $1.50 per 15. Good hatch guaranteed. Stock for sale at hargain prices. Write for particulars.

H. M. McMONAGLE,
Fredericton, : : N. B.

FOR SALE !

Four-year-old Registered Jersey Bull, "Bonnie Leslie." Weight ahout 1,200. Son of "The Monk" and "Lady Lorneburn." Also month old Registered Jersey bull, son of "Bonnie Leslie" and "Buttercup of Hillgrove 2nd."

ROSCOE A. FILLMORE,
R. R. I. OROMOCTO, N. B.

FOR SALE !

America's greatest winning marvelous egg producing (300 strain), Fawn and White Indian Runner Ducks. The hreed you'll eventually adopt. Lay more eggs than poultry and eat less feed. Large snow white fertile eggs $1.50 per setting. Safe arrival guaranteed. Order now.

LORNE MURRAY, Harrow, Ont.

Second Annual Potato Growing Contests

Under the Auspices of

The New Brunswick Potato Growers' Association

"Agriculture is an art that renders those who understand it rich, but leaves those who do not understand it, however hard they may labor in it, to live in poverty."—XENOPHON.

We want every Potato Grower in the Province to join the Association and take part in these contests.

Address all enquiries or entries to

A. C. TAYLOR, Secretary,
WOODSTOCK, N. B.

PRIZE LIST
OF
Potato Growing Contests

$600---IN PRIZES---$600

Open to all potato growers in the province of New Brunswick, upon the payment of $1.00, annual dues, to the Association.

Class (1)—5 acres or more of any variety of the Green Mountain Group.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
$30	$25	$20	$17	$15	$12	$10	$8	$6	$5	$3	$2

Class (2)—2 acres or more of Irish Cobblers.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
$25	$20	$15	$12	$10	$8	$6	$5	$3	$2		

Class (3)—Seed plot of 500 hills or more.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
$25	$20	$15	$12	$10	$8	$6	$5	$3	$2		

Class (4)—Best conducted spraying test.

1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	11th	12th
$20	$15	$12	$10	$8	$6	$5	$4				

Secure productive seed, practice seed selection by maintining a seed plot. Select the seed tubers carefully and soak them in a solution of Formalin, 1 pint in 30 gallons of water for 1 1-2 or 2 hours.

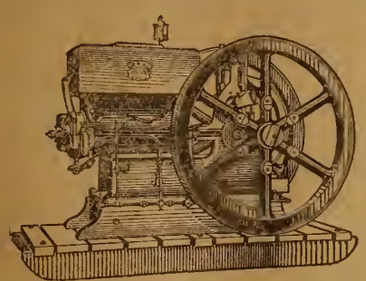
Entry forms will be supplied upon application to the Secretary.

Brantford Gasoline and Kerosene Engines

Stationary or Mounted

An Engine for Every Need

Kerosene Traction Engines



We Manufacture Complete lines of
Wind Mills, Grain Grinders, Wood Sawing Outfits, Pumps, Tanks, Water Boxes, Concrete Mixers, Power Spraying Outfits, etc.

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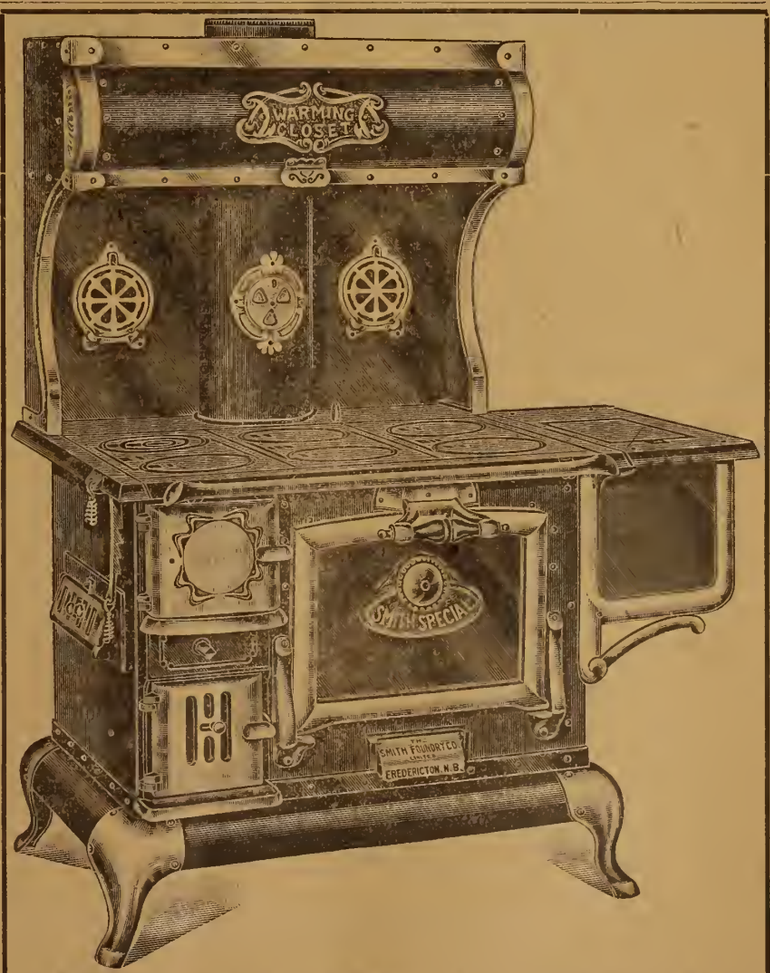
GOOLD, SHAPELY & MUIR CO., LTD., BRANTFORD, ONT.
A. McCAUSLAND, Victoria Hotel, St. John, N. B., Maritime Representative.



THE SMITH FOUNDRY COMPANY, LTD., Fredericton, N. B.
SMITH BROTHERS, General Store, Sussex, N. B.

IN GROWING OF STRAWBERRIES ESSENTIALS TO BE OBSERVED IN PLANTING AND CULTIVATION

In selecting a site for a strawberry plantation, there are a few essentials that must be considered First, a rich, sandy loam seems to be best adapted for this crop, and if it has a quicksand subsoil so much the better. In case of drouth picking time a patch thus situated can pump up its market requirement, which is a decided advantage. A clay soil, provided it is not too stiff and is well drained, will produce fruit of fine quality, but the yields procured are not generally of the most profitable. Perhaps, however, sandy land having a gravelly subsoil is the poorest combination.

Usually land that will produce a good crop of roots is suitable for strawberries. Moreover, about the same method may be followed. There is this difference, though: In the case of the former avoid even a clover sod. Formerly, the writer supposed this land to be ideal and would think so still if it did not harbor so many white grubs. For this reason, it is preferable to follow a sod with corn and roots and plant the next year with strawberries . This also gives an opportunity to destroy the weeds to a large extent. It is generally advisable to use well-rotted manure as the ideal fertilizer for this crop. In the case of most farmers, nowadays, our present system of handling stable manure does not provide for much rotted manure being kept in the yard. It is spread on the land practically as fast as it is made. This, of course, means lots of weeds, so it is well to plan a preparatory hoe-crop, the cultivation of which will destroy the majority of these previous to setting out the plants. Wood ashes applied broadcast and harrowed in will prove very satisfactory. Beneficial results may be obtained from amounts ranging from twenty-five to one hundred bushels to the acre.

In setting out a new patch, always try to have the work done during May. For this purpose, it is best, when possible, to use home-grown plants. Being dug up and transplanted when fresh they are much more apt to live than those procured from a distance. It is important to use only those that have made their growth the year before. The ones that have fruited, have been weakened in vitality by the production of runners.

Regarding the varieties, it is best to be governed by what is known to be satisfactory in one's locality. As the earliest varieties usually bring the best prices, it is important to plant those which yield the greatest quantity of fruit as early as possible. It is also important to have varieties that will bear fairly large fruit. When they are to be shipped some distance a firm berry is also desirable. For instance Eastern Ontario is pretty sure of a severe winter and in view of this the Central Experimental Farm authorities recommended the following varieties as being especially hardy and hence more suitable for this district: Belder Wood. Lovett, Senator Dunlap, Pocomoke and Crescent.

The most satisfactory method for the average grower is that known as the matted row. It economizes labor, and while results may not always be equal to that obtained where special methods are adopted, there is less expense attached to it, and consequently, greater profit. In deciding upon the distance apart to set the plants, much will depend on the variety and the time. For instance, varieties making a large number of runners, such as Splendid and Senator Dunlop, may be planted further apart than those throwing out comparatively few runners, such as Williams. Then, too, if the planting is made in early spring thus allowing a long season for growth, a very narrow spacing will be unecessary. A good plan is to make rows with a marker, say four feet apart, and then cross-mark with rows two feet apart so that the plants may be set where the lines intersect. This admits of cultivation both ways, making it easier to keep down the weeds, and insure a better growth from a more thorough cultivation.

In planting, the holes may be made with a dible, a trowel or a spade. Personally, the writer prefers a spade. The hole is opened by forcing the spade into the ground and presing it forward and baskward. When it is withdrawn, the plant is placed in position with the roots spread fanlike against the side of the hole, and the soil pressed firmly against them with the foot. Care should be taken to have the crown of the plant just level with the surface of the ground when the job is done. If too high, the ground will dry out; if tool ow, it will be smothered.

As the future value of the crop will depend largely on the strength of the runners, and the new plants formed during the summer, it is important to encourage rapid growth at the outset. To accomplish this it is necessary to start the cultivator at the earlies possible moment and keep it going at frequent intervals until the work is interfered with by the growing runners. The earlier cultivations should be deep in order that the soil may be kept loose to encourage root development, and to warm and aerate it. Later this work should be more shallow so as not to injure the roots. As the season advances, it will be necessary to practice occasional hoeing in order to cut off stray weeds and keep the surface in proper condition.

If the best results are to be obtained it is essential to do a certain amount of hand work. All blossoms appearing during the first season should be pinched off so as to reserve the strength of the plant for throwing out runners. As a rule, if conditions have been right, most varieties make far more runners than should be allowed to remain. The strongest of these sould be placed where they will root most quickly and be uniformly distributed, and the ones not required, destroyed. As nearly as possible, the should be managed so that the runners wil not be nearer than from four to six inches apart.

The matter of winter protection is also important. While the strawberry is hardy and will stand almost any amount of cold weather, the alternate freezing and thawing of the ground in early spring is more or less fatal to it. Along in December after the ground has been frozen quite hard, the rows should be covered with a light coating of straw in order to prevent the heaving referred to. In the spring most of this covering should be removed, only enough being left to form a good mulch around the plants and keep the fruit clean.

What Will You Do For Help?

FARM help is scarce, but this condition can be relieved to a marked degree by using machines that accomplish more work in a given time with less man power.

Why should the farmer cling to horses—a slow, expensive means of power—when every other business is adopting the truck and thereby reducing the cost of hauling, speeding up deliveries, and saving for human needs the food that the horses would otherwise consume?

The motor driven truck can work constantly at maximum load under the burning summer sun, or in the coldest weather. Unlike the horse it needs no rests while working, it eats only while in actual use, and when the day's work is done it requires very little attention, and leaves you free for other "Chores" about the place. Then, it can be housed in one-quarter the space of the horses, wagon and harness it replaces.

It is a mistaken idea that a truck is useful only for driving upon paved roads. The Ford can be driven all over the farm, and used for hauling grain, potatoes, fruit, roots, fertilizer, wood, stock, milk or any other product. The speed it travels, the time it saves, and its low upkeep cost appeal very strongly to all users of the Ford Truck. If you need help, order your Ford One Ton Truck today.

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MAN BEHIND DAIRY COW IS THE REAL DAIRY POWER THAT WILL COMPEL SUCCESS

Within recent years much scientific knowledge has been made available, with the object of making the dairy cow a more profitable investment. Special emphasis has been placed on the various phases of breeding and selection and feeds and feeding, involving the more or less complex operations of figuring balanced rations. Undoubtedly much good has accrued. Yet in the application of this scientific knowledge in a sufficiently practical way, to get results depends very largely on the man himself who is personally engaged in the business. This point of contact between knowledge and application is too frequently overlooked. When the cow on test makes a record that startles the dairy world, we invariably think of the man behind that particular cow. What are his special characteristics? What does he know? What does he do?

If a careful analysis is made of the circumstances, it will generally be found that his ability to do things from the standpoint of common sense is of more importance than merely knowing how. Better returns would often be secured if we always practiced the best we knew. But no dairyman of ambition will want to stand still. He will keep his eyes open to new possibilities in his line. Here he will need to exercise a degree of discrimination. To be an idealist and dream of future success is all right and quite commendable, but planning for the future must go hand in hand with good honest hustling. Some there are who look askance on every new idea that crops up. The fact that it is not in their regular routine causes them to be suspicious of its utility. This is going to the other extreme. The man behind the cow should possess open-mindedness as one of his chief characteristics. Remembering the injunction of Paul, let him "prove all things, hold fast to that which is good."

Of course, dairying as an occupation has its obstacles to overcome. The reater the success, the greater the difficulty of maintaining it. The man who is in and out at the first excuse never gets anywhere. To be a winner he must possess stability. In a rural district an association of farmers had surrounded the local cemetery with a new fence and a handsome gate. To complete the job they sought a motto to place over the entrance. Not being able to agree on anything definite, an appeal was made to Pat, the man who had dug the post holes. "Sure, and the best one I can think of," replied Pat, "is, 'We're in to stay.'" The man who adopts Pat's motto in the dairy business and lives up to it, has in him, at least, one important element of success.

The successful dairyman must be a constant student of "cowology." Considerable knowledge may be obtained by a careful observation of the animals under his care. He must be familiar with type and pedigree and know what degree of perfection is indicated. He must understand how to keep a cow in normal condition or provide a remedy when occasion demands it. A knowledge of sanitation is also essential if the herd is to be maintained constitutionally strong. While experience will teach much, the information thus obtained should be supplemented by the reading of good literature. This will include the bulletins and reports of experiment stations, articles in the agricultural press, etc. Life is too short to depend entirely on personal investigation. The wise man seeks a knowledge of his business from every possible source, then selects that which is best adapted to his own needs. These enquiries afield cannot but add to his capacity as a dairyman.

Some one is responsible for saying, "The man who breeds scrub cows is a scrub, he who breeds gardes is a grade but the man who breeds pure-breds of high rank is a thoroughbred." Of course, this statement needs modifying. Many a man who today stands high in the live stock world started with scrubs, for financial reasons, and gradually worked his way to the top. With such a man behind the cow a general advance is not long in taking place. He knows his cows not so much as Jerseys, Holsteins or Ayrshires, but first as individuals. He does not try to produce a May Echo out of an ordinary cow, because her name appears in the herd book. He weighs and tests the milk of each cow to ascertain her capacity. There is no guess work about it. Having this information at hand he is able to treat each animal according to her special requirements. Knowing what these are, each cow gets the feed and care that will enable her to do her best—not some other cow's best. Such qualifications have developed many a splendid herd throughout the country, and here and there, an animal with a magnificent record. To achieve this, the man behind the cow may be rightly termed a thoroughbred, and deserves to be ranked with the world's greatest.

nh W -WU oaccg-ifi shrdlu etaoin aoin

Coat and Shirt-Waist Hangers can easily be made at home from old magazines. Roll the magazine tightly and tie. Wrap in tissue paper, tucking it in at the ends. Tie again around the middle of the roll with a stout cord or wire, leaving a good sized loop by which it may be hung.

By this SIGN you will know the B-H Dealer

If PAINT were paid for in WHEAT

DO not excuse a lazy neglect of painting this Spring by the mistaken view that present paint prices make painting an extravagance. That argument does not bear examination at all—because paint prices are not high, as compared with other necessities. The farmer's wheat, fixed in price at $2.25 a bushel, will buy more paint today than a bushel of wheat ever bought before. When paint was cheaper, wheat was cheaper; and so with other farm produce and dairy produce too. It all brings more today than in pre-war days. For proper protection of his home exterior—to prevent decay and weather-damage—the farmer cannot afford to neglect his Spring painting; nor can he afford to use cheap paint. It's economy in the long run to use a paint so good as

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30% Pure White Zinc
100% Pure Paint

This is the paint we guarantee to possess as its important basis the above correct formula.

This formula, printed on every can, and guaranteed over our President's signature, commits us to this standard. High in cost as white lead has become, we *must* use it in the same proportion as heretofore. To use less of it, would necessitate the removal of the guarantee from our cans—and to do that would injure the reputation that these paints have acquired by reason of their superior ingredients. It is by using pure white lead and pure zinc in such liberal quantities that we have been able to produce a paint that truly excels in covering capacity—and that stands the severe climate test of Canada in a way that spells true economy for all who use it.

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For Interior Varnishing
The name "China-Lac" suggests a china-like finish—and that is just the kind of finish you get from the use of China-Lac—the perfect varnish stain. Being transparent, it preserves the "grain-beauty" of the natural wood—at the same time giving splendid color effects. Easy to apply—not affected by either hot or cold water.

For Staining the Roof
Our "Anchor" Brand Shingle Stains are especially prepared to preserve wood from decay. Easy to apply—on rough surfaces they give a better effect than paint. Shingles may be dipped or brushed on. Come in 19 different colors.

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Use Fresconette—a flat tone oil paint. Fresconette comes in a variety of shades. It is absolutely sanitary, for it may be cleaned with a damp cloth or thoroughly washed at will.

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Our "FLOORLUSTRE" finishes a floor with a lustrous coating of the most durable enamel. Will stand hardest wear—will not show scratches. Excellent for interior floors. For Porch Floors, Ceilings, Posts, etc., where surface is exposed to the weather, use B-H Porch Floor Paints.

Imperial Barn Paint affords a convenient protection for barn and outbuildings, made of good material, covers well, dries hard, goes furthest and lasts longest.

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Brantford Asphalt Roofing

is finished on both sides with a surface of silicia sand and is made in three thicknesses and weights.

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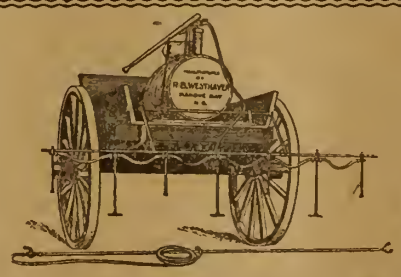

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Clover and Clover Seed Production

The agricultural survey of Dundas county in 1916, showed that a very small percentage of the farmers were growing their own clover seed. Practically all visited were sowing red clover, but on many of the farms the amount of seed sown per acre was very small, being in some instances less than three pounds. About two-thirds of the grain sown was found to be seeded with clover.

Red clover is one of the principal foundation stones of permanent agriculture in Dundas county. It has for centuries constituted an important factor in maintaining a permanent system of agriculture in the Old World. In this country, it has assumed in recent years a more and more important role in the maintenance of soil fertility. It is utilized both as hay and as a pasture crop, and sometimes as a soiling crop.

Clover as Feed.—Clover cut at the right time and properly cured can hardly be surpassed as a dry fodder for dairy cows and beef cattle. A moderate amount mixed with timothy is also good for horses. Sheep and young stock are fond of clover and will thrive better upon it than upon timothy. It contains more digestible protein and is also a better fat producing fodder than timothy.

Clover as a Fertilizer.—Clover stores in the tubercles on its roots nitrogen from the air and it also forms humus in the soil when ploughed under as a green manure. Consequently, it adds plant food to the soil and improves its texture. From 1894 to 1902, comprehensive experiments were conducted at the Central Experimental Farm, Ottawa, to determine the effort of clover upon soils. Various kinds of farm crops were grown on plots, a portion of which had grown clover in the previous year and a portion of which had not been seeded to clover the previous year. A large number of plots were usd in this experiment, many kinds of crops were grown and as the experiment extended over several years, the results are reliable and valuable. There was a noticeable increase in yield on the plots where clover had been grown. The increase in Banner oats amounted in some instances to as much as 19 bushels an acre. The increase in barley was as high as 15 bushels an acre. In corn fodder, the increase on the plots receiving clover was as high as four tons in the case of Longfellow, while with Leaming, there was an increase, in some instances, of over 11 tons per acre. Potatoes showed an increase as high as 50 bushels to the acre on the clover plots.

The method of conducting these experiments was, briefly, as follows: Ten or twelve pounds of clover seed were sown in the spring with a nurse crop. Late in the fall the resulting clover crop was ploughed down if grain was to follow the next year, or ploughed down the second or third week in May of the following spring if corn and potatoes were to be planted. Thus, it was from only one year's growth of the clover, that these results were obtained. Other experiments have been conducted which have shown that a crop of clover stubble ploughed under increased crop yields.

Good Seed Necessary.—In sowing clover, good seed should be used. Good seed, though costing more, has been found by repeated trial to be the cheapest in the end.

Methods of Seeding.—While clover has been hailed as a great soil improver, it must not be thought that it can always be grown successfully on poor and worn-out soils, or that it will give satisfactory results when carelessly sown. In Dundas county, clover is usually seeded with the spring grain. On sandy soils it should be sown a little deeper than on the heavier soils in order that it may come in contact with the moist earth, which will aid germination. From one and one half to two inches is not too deep in sandy soil. A better seeding will usually be obtained when sown with a nurse crop that will be harvested early than if sown with later maturing crops. When clover seed is being sown, it is best to sow the nurse crop slightly thinner than usual. A light top dressing of manure on the knolls and on spots where the soil is poor will often prove beneficial and will help the young plants to make a stronger growth to carry them through the winter.

There are various opinions regarding the effect of clover seeding on the nurse grain crop. This matter has received attention from the Central Experimental Farm at Ottawa and it has been found that the seeding of clover has no noticeable effect upon the yield of the grain crop with which it is sown. Further south, it has been found that, when the nurse crop is cut, the hot dry weather often kills out the young crop of clover. This may occasionally happen in Eastern Ontario, but the weather is usually cool enough and there is generally sufficient moisture in the soil to enable the young plants to survive and become vigorous before going into the winter.

Clover Sown with Summer Pasture.—Land where annual summer pastures are sown, such as oats and peas, or oats and vetches is usually a good place to seed with clover. It has been found that, on account of the nurse crop being pastured off early, the clover seeding is given an opportunity to develop. While the tramping of the ground may be thought to injure the clover plants, it has been found to be beneficial rather than harmful.

Seeding with Fall Grain.—While very little fall grain is grown in Dundas county, the method of seeding fall crops may be here mentioned. Timothy is sown in the fall with the fall grain and the clover seeded in the spring. The clover seed should be sown upon the last light fall of snow late in the spring or on a morning when the ground is slightly frozen.

Thickness of Seeding.—Many farmers fail to get a good stand of clover because they do not sow enough seed. Where a field is to be kept for hay and pasture, timothy should always be sown with the clover. If the clover does not come throuh the winter successfully, or, for some other reason, does not give a good crop, the farmer will have the timothy to fall back upon. A good mixture, is eight pounds of red clover, two pounds of alsike, and eight pounds of timothy. This may seem a fairly heavy seeding, but from many tests conducted at our experimental stations, the thick seeding of clover and timothy has given uniformly better results than the thin seeding. On the heavier soil of Dundas county, if the season is favourable, a lighter seeding of clover will give good crops, but it is safer to sow a sufficient amount to allow for the seeds that will not germinate and for the plants that will be killed out. The thicker stand of clover also forms a winter protection and helps the plants to survive the cold weather. A thick crop of clover also helps to control and smother out weeds. If a thin crop of clover there will always be open spaces where weeds are sure to grow. An excellent test for each farmer in Dundas county to conduct would be to sow, on a field where soil conditions are uniform, a round or two of the drill with a lighter seeding than he usually sows, and a round or two of the drill with a heavier seeding than he usually sows. The two plots should be sown side by side and each seeding carefully marked in order to compare the results, both as to ability to come through the winter and as to yield.

Care of Clover Going into the Winter.—Many farmers make a practice of pasturing the young seeding in the fall after the grain has been cut. They thing it is a waste to allow the young crop to go unpastured. Experience has shown that very often young clover crops closely pastured down have been killed out during the winter, because the vitality and strength of the plants were gone and in their weakened condition they could not survive the trying winter and spring weather.

If clover is being tried on a field where the soil is poor, it is a good plan to give it a light top dressing of manure after the grain crop has been cut. This will strengthen the young plants and will help them to come through the winter in better condtiion.

Seed Production.—A very small percentage of the farmers in Dundas county are producing their own clover seed. This is not because it cannot be successfully produced in Dundas, but because very little attention has been given to this matter in the past. Some splendid crops of seed were harvested and threshed by Dundas County farmers during the past season. There are many advantages to be gained by growing and sowing home-grown seed. The farmer who has seed of his own this year (1918) will not likely sow it so sparingly aa he would if he had to buy it at the present high price. Best results are obtained from the home-grown seed. On a number of illustration farms conducted in other parts of Ontario by the Commission of Conservation in previous years, home-grown seed, and seed purchased from seed merchants, were sown side by side in the same field, under uniform conditions. In every instance, the home-grown seed came throuhg the winter better. In some cases, the crop from home-grown seed came through the winter safely, while that from purchased seed was badly injured. By sowing home-grown seed, there is no risk of introducing noxious weeds from other parts of the country as often happens when the seed is purchased.

The second crop of clover is often pastured when it would pay much better to allow it to ripen for seed. It does not matter if some timothy or other grasses be present, as the clover aftermath is but little affected by other grasses in the second crop, which usually make a light second growth. It often happens too, that a second crop of clover looks thin and may be thought too poor to produce a crop of seed. Let it be remembered, however, that a thin crop will not produce much pasture. In one case in Quebec, known to the writer, a 24-acre field of second crop, which was being kept for seed, looked to be too thin to be worth harvesting and though it gave only one-half ton to the acre of the clover before being threshed, it yielded 141 pounds of seed per acre. Had this field been pastured much of the clover would have been tramped down into the ground and the amount of feed really obtained by the stock would have been small.

Cut First Crop Early.—A mistake commonly made by many farmers is the cutting of the hay crop too late. Very often this will prevent the harvesting of clover seed. The seed on red clover comes from the second cutting; consequently, the first crop should be cut early to allow the second crop to produce seed before danger of frost in the fall. To get best results in Dundas county, the first crop should be cut before July 1st. Many farmers postpone the cutting of the first crop, thinking that the longer they leave it the more tons of hay they will obtain. This is true up to a certain point, but, after thore point is reached in the maturity of the crop, the percentage of crude fibre becomes greater, lowering the percentage of digestible protein. Early cut hay, providing it is well cured, will be more nutritious and more readily eaten than hay which is allowed to become too ripe. Cut the first crop early if the second crop is to be saved for seed.

Keep Weeds Cut.—Home-grown seed is good, but absolutely clean home-grown seed is better. There will likely be more weeds in the first crop than in the second. The weeds in the second crop should be kept cut or pulled. This is usually an easy matter to handle. The weeds at this time of year

(Continued on page 551)

No Special Curtailment

Washington, D. C.—There will be no specified curtailments of the motor car industry. Car manufacturers have agreed with Government officials that war needs demand 100 per cent, priority on steel and other materials required for munitions manufacture. The committee completed negotiations with the War Industries Board with the understanding that the Government will take steel and whatever other materials it needs up to 100 per cent. and the motor car manufacturers will arrange their programs accordingly. They will use their proportion of that steel that is left over pro rata with other non-war manufacturers.

Each company has been advised by the committee to consider its production and program problems in view of this arrangement. The committee was informed by the War Industries Board that there had been no official attempt to set the curtailment to 75 per cent. as had benn indicated by newspaper despatches. The committee denied all responsibility for this statement.

Car Makers' Argument

The conference included arguments on the part of the motor car committee to the effect that labor would be hrown out of work, huge organaizations disrupted, making them inefficient for war work, and that financial disaster of a $2,000,000,000 industry would result tfrom a drastic curtailment. When the War Industries Board officials recommended a severe reduction in passenger car manufacture it was pointed out that they had been in error previously, that the shortage situation might clear up in the next 90 day sand that the Government did not actually know its own requirements for steel and other materials, and that a severe curtailment might mean the destruction of huge industries unnecessarily.

When the Government officials persisted the motor car committee stood pat. It stated that it would not set a curtailment figure but would force the responsibility for any such drastic curtailment upon the War Industries Board. In view of its own lack of knowledge of steel and other material requirements, the Board hesitated to set a specified drastic curtailment which might be unnecessary and in the near future bring severe criticism upon the War Industries Board, with the result stated above—that there will be no specified curtailment, but instead an arrangement whereby the Government has first and full priority with motor car makers taking what materials are left for use in production of cars.

It was agreed that this plan was by far the best. It prevents all hysteria and panic in the industry and especially among the 37,000 dealers. It gives the Government all of the materials it needs, yet it allows the industry to run up to normal production, as speedily as the shortage situation clears up. Acording to the agreement made between the industry and the War Industries Board the present 30 per cent. curtailment period expires July 31.

The steel situation is the pressisg one, and whatever curtailment for next year is decided upon will be dictated very largely by the supply of steel. The Shiping Board, under Edwin N. Hurley, has announced that it is building 4,000,000 tons of shipping but Chas. M. Schwab, who has assumed charge of production, declares that he is going to build 6,000,000 tons of shipping. This will mean a heavy drain on the steel resources of the country. The proposal not to ship steel to any industries for a period of 60 days seems to have been primarily intended to stock up the ship yards with steel so that next winter there will not be any holding back of the ship-building program because of a failure of our transportation system, similar to that of last year. The War Industries Board is determined that those primary war industries, such as ship-building, etc., will be cared for no matter how other industries have to suffer.

The N. A. C. has given out the following statement, indicating that it is working in harmony with the War Industries Board on the question of curtailment:

> Representatives of the National Automobile Chamber of Commerce, W. C. Durant, John N. Willys, John F. Dodge, Walter E. Flanders, C. C. Hanch and Hugh Chalmers, have just completed a 3-day session reviewing with the War IndustriesBoard, the War Department, the Railroad Administration and other government departments the situation in regard to the supply of raw materials and transportation.
>
> After a thorough investigation the committee was convinced that the government demands should be given unquestioned priority, volunteered all possible assistance and pledged the entire resources of the industry to speeding up the war program; keeping in mind at the same time its accomplishment, with as little disturbance to general business as possible.
>
> Until the government needs are more definitely known, the industry, in addition to the manufacture of airplanes, tanks, tractors, shells, mineanchors, helmets and other munitions will apply itself to helping to solve the great problem of transportation which is directly in its line.

The Sugar Situation

Some surprise has been expressed by the general public at the new sugar regulations put in force the 1st day of May by the Canada Food Board. People wondered why the sudden scarcity of sugar, having understood since the first of the year that the new Cuban crop was sufficient to supply the wants of this Country and the United States, whatever might have been the situation in Europe, where Java sugar was cut off owing to war conditions.

The situation in this Country, however, has been materially changed since the first of the year. At that time the International Sugar Commission of New York, which handles the raw sugar of this Continent, allocating and distributing the amounts in Canada and the United States, as well as other Countries, considered that there was sufficient sugar in Cuba to allow Canada 320,000 tons as against 400,000 imported last year. As Canada last year exported 55,000 tons of refined sugar, her consumption was then 345,000 tons and this year at 320,000 tons her supply would be reduced merely by 25,000 tons or 6%, which would not have been a severe hardship upon anybody or made much disturbance in the trade. In addition to this outlook the Commission expected to have a surplus of 700,000 tons to work on later, of which Canada's share would be 70,000 tons or 10%, so that before the year was out this Country would have been supplied, under former arrangements, with 45,000 tons more sugar this year than last. Consequently there was no necessity for the Food Board placing any restrictions upon the consumption of sugar in this Country, in view of the fact that Trans-Atlantic shipping was so taken up with other more vital cargoes that space could not be spared for sugar. Wheat, meat, munitions and men for the Army are more imperatively needed in Europe than even sugar, and there are not ships enough to carry everything.

It was expected, however, that there would be shipping enough in the coastwise trade of the United States to bring raw sugar from Cuba and the West Indies to New York and other American points. Owing, however, to the congestion at the wharves of the Atlantic Coast, the break down in railway transportation and the general and totally unexpected demand upon the American transportation system generally, it has become a difficult matter to move the freight necessary for this Country and the difficulty has not been overcome as yet. It was hoped that some arrangement, for bringing sugar direct from Cuba to Canadian Ports, could have been effected but this attempt has had to be dropped. Shipping is not available, consequently the new sugar regulations.

Keen Interest in Co-operative Wool Marketing by N. B. Wool Growers

J. D. Thompson, Dominion Government Wool Grading Expert Says Fine Grade of Wool Accumulated at Fredericton Station

J. D. Thompson, expert wool grader from the Live Stock Branch, Ottawa, has arrived at Fredericton to grade the gool at the Fredericton warehouse. Next week he proceeds to Moncton to grade the wool at the Moncton warehouse. These wool warehouses are operated in connection with the Canadian Co-operative Wool Growers, Ltd. an Association organized to promote the sheep interests of Canada.

The Provincial Department of Agriculture has carried on a vigorous campaign in co-operation with the Livt Stock Branch and the Association to further interest the wool growers in this method of marketing whereby the middlemen and local buyers are eliminated. The wool passing direct from the grower to the purchaser.

By marketing through the Association, farmers can confidently expect to get the highest possible price obtainable.

Speaking of prices Mr. Thompson states that he has recently visited the Boston market and was given to understand that prices would range even higher than he had expected. Furthermore Mr. Thompson reports that the wool at the Fredericton warehouse will grade very high and that it is in the best condition of any wool that he has graded this year. This augurs well for the price that the New Brunswick wool growers will receive and also speaks well for the local wool growers, considering this is the initial effort, along this line, on an extensive scale in this province.

The main idea to keep in mind in marketing wool co-operatively is that the Association forces local buyers to pay somewhere near what the wool is worth, and farmers should keep this in mind. Again, the Association wool is graded and properly prepared. The Association caters to the Woolen Mills and gives them exactly what they want. They get a guaranteed product and consequently are willing to pay the highest market value.

The ware houses at Fredericton and Moncton will continue to take in wool during the entire month of June. Those farmers that have not any standard sacks or twine can ship in clean bran sacks and in lieu of paper twine can use the neck band to tie each fleece with separately.

United Farmers Organizing

At an executive meeting of the United Farmers of N. B. held in Woodstock on May 31st, arrangements were made to carry on an extensive organizing programme throughout the Province. Committees to arrange for organizing new branches were chosen as follows: Joh nYoung anad A. E. Chapman for York County; Thos. Caldwell John Fulton and Rennie Tracey for the upper end of Carleton County; Sterling Peopody, Frank Everett and C. Gordon Sharpe for the lower end of Carleton, Victoria County; Chas. Duman and Frank Henderson for south end; Judson Corey, Albert Dionne and Jerry Hafford for Tobique River; Frank Gillispie and Miss G. Portias for Grand Falls section. The Secretary read communication from L. Saunders, President of the Farmers' and Dairymen's Association, J. Titus Burns and others, all oflering their services to help with organaizing programme. There are requests coming from all parts of the Province for the services of an organaizer. A letter from R. McKenzie, Secretary of the Canadian Council of Agriculture, was read in which the Council offers to send a man to assist in organizing in the Province. It was received with enthusiasm.

At a meeting of the Directors of the United Farmers Co-operative Co. of New Brunswick, Ltd., C. L. Smith was made President of the Company, Rennie Tracy Vice-President, and C. Gordon Sharpe Sec.-Treas. Committees were appointed to arrange for the purchase of feed and fertilizer and to make arrangements for starting a Co-Operative store in Woodstock in the near future.

There was a strong feeling that the producer and consumer should be brought closer together at the earliest possible moment.

What a Cow Can Do

There never was a time when it was so unprofitable to keep unprofitable cows as the present year. With the high prices for feed and labor it is more difficult than ever to show a balance on the right side of the ledger in the dairy business. While the prices demanded for dairy products have advanced very materially, they have not kept pace with the pricest he dairyman has to pay for the various commodities essential to his business. It does not pay to keep boarder cows. If the farmer has given the individual cows in his herd an honest chance to make good, and strict records of their performance have beent kept, he is not on to his job if he continues to keep the delinquents.

For example, farmer A purchases two cows at $100 each. One of these consumes $135.00 worth of feed, but her calf and milk yield a return of $175.00. The other cow consumes an

equal amount of food but her calf and milk yield returns of only $75.00. The first cow makes a profit of $50 while the second cow is kept at a loss of $50. In other words the unprofitable cow eats up all the profit made by the profitable cow. The farmer would have been able to bank $50.00 if he had only kept cow number one. By keeping cow number two, the robber cow, he is forced to just break even, so far as cash returns are concerned. The care of cow number two took up a lot of his time and labor and he was minus the interest his money would have brought if left in the bank or otherwise invested judiciously.

Auchenbrain Brown Kate 4th, an Ayrshire cow, in a year gave 23,022 pounds of milk, testing 3.99 per cent fat. She was well fed. In the year she consumed 704 pounds of bran, 762 pounds of hominy, 1,074 pounds of ground oats, 548 pounds of gluten feed, 134 pounds of peanut meal, 908 pounds of oil meal, 8,000 pounds of silage, 21,000 pounds of beets and 2,880 pounds of alfalfa hay, the total costing $184.62. Her milk was sold at 5 cents per quart, and the income above the cost of feed was $541. She received as much feed as some men would give to a dairy herd. She had the ability to use it well. Four such cows on a little farm would make their owner a nice income and would require much less expenditure in time and labor than a herd of cows yielding individually a narrow margin of profit, of sufficient numbers to give a similar return.

Increasing Bees

The importance of increasing bees in preparation for a greater honey crop next year makes it oportune to draw attention to a simple method of increase that has been employed at the Central Experimental Farm, Ottawa. Some of the methods of increase used by beginners are wasteful, causing young brood to be deserted and consequently chilled and starved, or leaving the bees of the new colonies too long idle before their queen begins to lay. These troubles, however, may be prevented by making increase from colonies that have thrown a prime swarm, and at the same time a fair crop of honey may be obtained from the swarm.

The method consists in simply dividing the parent colony into a number of nuclei about six days after the swarm has left the hive. Each nucleis will consist of a comb or two containing honey, brood (much of which will be capped) and one or two queen-cells containing queens soon to emerge, with the adhering bees, placed in a separate hive towards evening. Held by their capped brood and queen-cells, the bees will not return next day to the parent hive to any extent, and it is possible under favorable conditions to make as many as eight or nine nuclei from a colony on ten combs, bu tthe inexperienced should not attempt more thana four or five.

Under ordinary conditions, the queen in each nucleis will emerge within a few hours and will commence laying within ten days. When she begins to lay, a comb of brood from another colony given to the nucleus will help to build it up quickly. A colony can us ually spare brood during the honey flow without reducing the honey crop gathered, because brood does not produce beee ready for field work for two or five weeks, by which time the honey flow has usually ceased.

If no swarmed colonies are available, the next best method of making increase is to place most of the brood of a strong colony into the super, leaving the queen below with the rest of the brood, a queen excluder separating the two chambers, and a week later to form two or three nuclei with the combs in the super and adhering beees, giving to each a queen-cell con taining a queen soon to emerge. Very often it will be found that the bees have made queen-cells on these combs. But it is better to raise them from selected stock.

However, the beginner is liable to meet with difficulties and losses in raising queens and forming nuclei from regular colonies. These difficulties increase when the honey flow declines or ceases. It then becomes hard to raise many or good queens, and the robbing of newly formed nuclei has to be carefully guarded against. June is often a better month than July for making increase, and August is too late in many places.

It is necessary to warn the inexperienced beekeeper against dividing up a colony into too many unclei. Nuclei should be strong enough by September 15 to fill the space between eight or nine combs in order to pass the winter safely. A pair filling only five spaces were, however, wintered successfully at Ottawa in a 10-frame hive with a wire-cloth partition between them. The following spring during dandelion bloom each was placed in a separate hive and became a strong colnoy in time for the clover honey flow.

Crow vs Corn

(Experimental Farms Note).

In Canada, the most serious enemy to the corn crop is the crow. A dose of shot is an infallible cure for the latter's fondness for corn, but, unfortunately it is more easily prescribed than administered. There are, however, other means of combatting the trouble.

(1). TREATING THE SEED. Immerse the corn for 2 or 3 minutes in water as hot as can be borne by the hand. Drain, and while the corn is still moist and warm, add half a cupful of coal tar or pint tar per gallon of seed. Stir until every kernel is coated with tar. As a drier, add a small quantity of lime, plaster, or even dry road dust. If the work is well done, seed so prepared may be sown by machine, but the feed should be watched carefully for fear clogging may occur.

(2) DEEP PLANTING. Plant the corn not less than 3 inches deep. This will prevent it from being washed to the surface by heavy rains and, after germination, the young shoot will break off when the crow attempts to pull up the plant.

(3). POISONED CORN. When crows are noticed on the field, take some corn, say two gallons, more or less according to the size of the field, and boil for about thirty minutes in just sufficient water to cover corn to the depth of one inch. To the water and corn, before boiling, add about one-eighth ounce of strychnine or, better still, of strychnine sulphate, for each gallon of water. Allow the corn to lie in the strychnine and water over night. In the morning drain off any water remaining and scatter the corn thinly over the corn field.

In making use of the above plan great care should be taken to pour the water off the corn into some hole or in a spot not likely to be frequented by children or domestic animals. Care should also be taken to keep poultry off the corn field for two or three weeks after the poisoned corn has been scattered thereon.

(4). A device much used in some localities is "stringing the field." Stakes 3 or 4 feet high are placed here and there and connected by twine to which may be attached pieces of paper or bits of bright tin. Dead crows obtained by method 3 may also be attached to the twine or stakes. The time-honoured "scarecrow" may also be tried, but is must be admitted that the crow of today does not seem very deeply impressed by this old device.

(5). If crows are noticed in or near the corn field have a boy watch the field for 2 or 3 days, firing a gun now and then when the crows are in sight and showing himself quite openly. Then put up a sort of tent in the field (a stack cover or binder cover will do). The crows are never sure but that the boy with the gun is in the tent and will give the spot a wide berth.

A combination of some or all of the above plans, which are simple and inexpensive and have been tested out with good results, will soon persuade the crow that teh locality is an undesirable one.

Cost of Mutton Production

(Experimental Farms Note)

The scarcity of wool and meat has given a new impetus to the sheep breeding industry in Canada and once it becomes firmly established as a common farm industry and the benefits coming from it are fully recognized, the writer feels confident that it will not again go into decline.

This class of stock, while enjoying to the full the benefit of the increased high prices of the products produced, is probably the one which has been affected the least by increased cost of production, common to the products from other closses of stock. This is due to the fact that the feed consumed consists larely of home grown roughages and grains thus eliminating, to a large extent, the purchase of high priced consentrates. It is also due, in part, to the fact that very little labour is required to handle a flock so that the increased price of labour has not the same effect.

To arrive at the cost of mutton production many factors must be taken into consideration. It may be safely considered that the value accruing from the manure produced and weeds destroyed fully offsets the labour expended. From the records of the breeding and feeding work at the Central Experimental Farm, the remaining factors in the cost of production of year old mutton may be tabulated as follows:—

Cost of feeding maintaining ewe from weaning of one lamb to weaning of next	$5.00	
Interest on value of ewe ($3.00 at 6%)		1.80
Service charges and maintenance of ram		.35
Cost of feeding lamb from weaning till finishing at one year old	6.72	
		$13.87
Wool from ewe (7 pounds at 60c per lb.)		4.20
Cost of 120 pounds mutton		9.67
Value of 100 pounds mutton, Spring 1918		17.75
Cost of 100 pounds mutton		8.06
Profit per 100 pounds		$ 9.69

This is a profit of $11.63 per lamb if but one lamb is raised per ewe.

The above figures are based on an increase of one lamb per ewe. Where two lambs wre raised practically the same results in weight may be expected at the end of the year. In such a case the first three items in the cost would be split between the two thus reducing the cost of $5.09 per hundredweight and increasing the profit to $12.66 per hundredweight.

The foregoing estimates are exclusive of overhead charges or depreciation but these items may well be overlooked as they are almost negligible in sheep raising owing to the fact that so little is required in buildings or equipment. Moreover the estimates are conservative and though they show a return of at least 38.8% on the investment of $30.00 per ewe, the same may be looked for under Eastern conditions while under Western conditions even greater dividends may be realized.

Raspberry Leaf Curl

(Experimental Farms Note)

In the interests of market gardeners and small fruit cultivators, this note on Raspberry Leaf Curl has been prepared at the Field Laboratory in Southern Ontario at St. Catharines, and is issued by the Central Experimental Farm, Ottawa.

This disease has been known for some time both under the above name, as well as under the name of Raspberry Yellows. Since the curling of the leaves is the most outstanding feature in connection with the disease, it is preferable to use the term Raspberry Leaf Curl.

The disease affects the leaves and shoots and is often confined to a single bush or part of a bush, some of the shoots being perfectly normal and others with the leaves affected. The affected shoots, instead of producing normal large, broad leaves, bear leaves which are conspicuously small and badly curled downwards. In the early stages this sympton is not so pronounced, and while a small amount of curling may occur then, the diseases is more noticeable on account of the yellowing which takes place during the summer because of the unhealthy state of the foliage. Since yellowing of the leaves may be due to a number of other causes, such as wet feet, poor soil, drought, etc., it is best to determine the disease mainly by the Leaf Curl symptons.

In the advanced stages, the canes bear no fruit. When first attacked, they flower almost normally, but the fruit is small and dry and shrivels up before ripening, so that little or no fruit is ever produced from an infected bush. Of the three varieties which are commonly grown in the Niagara district, Cuthbert, Marlborough and Herbert, the Herbert seems to be freest from the disease. The other two varieties are quite susceptible, but one rarely sees signs of Leaf Curl in the Herbert.

So far as is known the disease is not due to any parasitic organism. It apparently belongs to that type of trouble which has been called physiological disease, and could therefore be put into the same class with peach yellows and little peach, and the mosaic diseases of tomatoes, tobacco, potatoes and so forth. No records are available as to how the disease is brought into the field in the first place, nor how it is transmitted from one plant to another. It undoubtedly does spread once it becomes established in a plantation and many fine plantations are known to have been greatly injured by the presence of a large number of Leaf Curl plants. If the disease corresponds closely with the mosaic or yellow disease, one would suspect that it is carried either by insects or pruning operations.

Although too little is known about Leaf Curl to advise a sure means of control, one should always remove the affected plants as soon as they show signs of disease. They are of no use in any case and are likely to spread the disease to other parts of the plantation. In taking out Leaf Curl plants, one should be careful to get the whole of root system, otherwise the parts that are left will start to grow and produce new shoots which will also show Leaf Curl. It is possible that some of our Leaf Curl originates from nursery cuttings and some care should be taken when setting out a new plantation, to avoid this disease.

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Semi-Montbly Journal devoted to the interests of the farmers of the Maritime Provinces.

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JUNE 11, 1918.

DATES OF ISSUE.

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July	9-23
August	6-27
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SCREENINGS

Screenings are all wrong for seed, but all right for feed. A common argument of those who sow grain just as it comes from the bin is that the worthless stuff in it might just as well be wasted in the field as to be thrown out behinds the barn. It is not the waste but the pest of weeds which is of most importance in most cases of screening. Along with the weed seed should be classed the small, shrunken or light kernels. The grain cleaner is one of the most profietable pieces of farm machinery. It has been demonstrated over and over again that plump, heavy seed gives larger yields than light stuff. Screening reduces the percentage of weeds in the crop. While screenings are worse thon worthless when sown in the field, they are worth just about full value when fed.

Two students at North Dakota Agricultural College fed one pen of sheep ten weeks on oats and bran, one pen on the seeds of a weed known as pigeon grass and a third pen on screenings. Those getting oats and bran made the smallest gain. The sheep to which pigeon grass was fed gained 16 pounds more and ate only 12 pounds more of the feed while the lot receiving screenings gained 34 pounds more than the oats lot and ate just 12 pounds more screenings than the first lot ate of oats. Screenings commonly amount to 2 or 3 pounds per bushel of wheat and twice as much of oats. Indeed, some oat growers are so particular that they screen out fully one-half or more of the oats in order to get a high grade of plump heavy seed. We hope you put the screenings into the feedbox instead of the seedbox this spring.

GETTING AT THE BOTTOM OF THINGS

Observe the different manners in which two men will poke a grate fire. One will content himself with hammering at the coal on the top of the fire, making a little smoke and possibly hastening the combustion a little. Another, a little more thoughtful and patient, will take the poker and stir down under the grate until he gets the ashes out from beneath the coal, letting the air up through the mass. Then without more fuel or attention it flames into a ruddy glow; the fire is a success.

Now that is like the dicerent methods of meeting the farm's problems. One man whose farm is more or less a failure hammers away in the old way at the things nearest in sight, working as hard as he can, and keeping his boys at it as hard as they can go it, plowinig the same field over and over without drainage or fertilization, keeping the same old cow, without testing The fire they get is feeble and insufficient. The profit of their farm is probably in the minus column. The other man, who would have poked the fire from beneath to let the air in, findinig his farm unprofitable or unsatisfactory, uses thought and reason. He discovers the farm's need of drainage, he attacks that. He finds the need of phosphorous and supplies it. He see the lack of legumes on the ground; he sows them. He sees the need of better animals; he gets the better cows and testing them, keeps only those that show a profit. Probably he may not work as hard as his neighbor across the fence but when he has let the air into the soil by the good drainage and has the phosphorus, the legumes and the good animals on the farm then everything comes up fienely of itself, and the very best things seem to happen as though by magic. It was not accident at all. It was planning; finding the source of troubles and curing them. It was letting the air in under the grate. It is what we call well-directed energy that goes to the bottom of the trouble, whether it is a grate fire or a sour and unproductive farm.

LEADERS IN RURAL COMMUNITIES

Make the farm as profitable as we may, we cannot realize returns sufficient to hold there the ambitious boy whose aim is to accumulate vast riches. True, there may be exceptions to this rule, but it applies in a very large percentage of cases. The country makes in the main, neither millionaires nor mendicants, but it is a great place for the development of men. It is in cities that the financial gulf is wide. There we find wealth and want. There is the chance to become a millionaire—yes, and the danger of becoming a mere cog in a machine. Yet, unafraid, the fortune-seeker leaves the farm.

Not every country born boy should remain in the country. The city needs many of these lads fresh from the life-giving, brain-and-brawn-building land, but for the country's good—and the nation's, too—the drain has been too heavy.

The most lametable lack of country life is leadership. So it is of prime importance that a fair proportion of the youth who may become leaders remain in rural communities. How is this desirable end to be brought about? Largely by holding up to the ambitious farm boy the right kind of ideals and getting in his mind the best ideas, by giving to him a vision filled with the porper attitude toward work and the world, by making it possible for him to see in farm work more than dirt and drudgery. The worker must see in his daily duties tasks worthy of his talents. Herein lies the strength of our schools and of teaching and research work in agriculture. Science is valuable not alone for the limited mastery it has given to man over the soil, growing plants and animal life with which he daily comes in contact, but it serves also to enable him to see in these thnigs interest, possibilities, power and a field for unlimited research.

So with farming made sufficiently remunerative as to give to its followers reasonable returns with interest quickened and success properly defined, we may, without the possibility of great riches for the many, see fewer country born boys turn to the city.

LOAFING

We now have an anti-loafing law. Said law was not enacted too son. May it long continue in force after the crisis which has brought it into being is all over and pushed into the dim and distant past.

—All the loss from loafers is not occasioned by the idlers who frequent street corners or sit about the stoves in small-town stores. There is loafing on the farm and, strange, as it may at first seem, many a hard-working farmer is a heavy loser from loafing. He may not loaf, but he may allow a part of his farm to loaf; or it may be his cows or even his chickens. The brush-grown lands which if cleared would grow good crops of cereals or oats, is land that loafs. The same is true of the lowland that needs draining, or of the land that is taken up with a crooked stream that could be straightened. And in the cultivated field, where untested seed is planted and a poor stand results, there is land that loafs. Here, too, is labor that is lost. The cow that fails to pay her board bill is a loafer; so are the surplus work horses that seldom work. Land values and interest rates are too high to allow of any unnecessary loafing on the farm. Every acre and every animal must do its duty.

AS TO NAMES

There is something in names. This is the age of travel by auto and because it is there is an added need of names. Where formerly one stranger passed by a farm on a well kept road there now journey a hundred strangers. So the value and pleasure possible in a farm name are increased manyfold. There comes too, a real demand for named roads and for signboards. And why not, on the main traveled street in each town or village, the name of the place so that he who rides can read? Would it not be an effective bit of advertising for any town or county to have all its main roads and the farms along them named and the names prominently displayed, signboards at road turns and crossings and town and hamlet names in plain sight?

"Nameless" is not the word that we associate with joy and success. "A good name" has a scriptural sanction.

* * *

A Southerner greatly interested in the encouraging of home industry and a strong advocate of the principal of producing as many commodities a thome as possible, delivered the following address to a group of farmers:

"Now, my farming friends, what the matter with you is that you don't live at home, you haven't practiced and learned the fruits of conserving and utilizing your own resources. The great trouble is that you have contented yourselves with continually buying something from somebody else and selling nothing to anybody. Now to ilustrate what I am talking about, I want to call your attention to the fact that when you awake in the morning it is to the alarm of a Connecticut clock. You get up and button your Chicago suspenders on to your Detroit overalls; you go out and wash your face in the morning in a Toledo wash pan with Cincinnati soap. You sit down to the table and eat breakfast from a table made in Grand Rapids, Michigan. And for your breakfast you eat Chicago

meat, Tenesee flour cooked on a St. Louis stove. You go out and put a New York bridle on a Kentucky mule fed on Iowa corn. And all day you plow a farm covered with a Massachusetts mortgage, with a plow made in Chattanooge, Tenessee. And when your day's work is over and you go home at night you read a bible printed in Boston. You read a prayer written in Jerusalem and you crawl under a blanket manufactured in the State of New Jersey to be kept awake all night by a damn dog, the only home product on the farm."

The foregoing pretty nearly expresses the feed situation in the Maritime Provinces. Can it not to a certain extent be remedied?

CLOVERS AND CLOVER SEED PRODUCTION

(Continued from page 547)

are not so troublesome and, as the second crop does not usually grow so high, the weeds can be seen and removed. It will pay to do it. The cleaner the seed, the higher it will grade; and the higher it will grade, the higher price that can be obtained for that which is to be sold.

Time to Cut for Seed.—As a rule, the second crop may be cut for seed when nearly all of the heads are well browned. Do not be governed altogether, though, by the number of browned heads. It is well to go carefully over the field and pluck a few heads here and there and rub them out in the palm of the hand. If the heads shell easily and the seeds come out clean, it is time to cut. If the seed is soft and not properly filled, or if it cannot be shelled out easily, let the crop stand, even if a few of the riper heads are lost. If the seed is ripe in the head, the earl yfrosts of fall will not hurt it. If the seed is not ripe, it will not be good for sowing, even if cut to avoid frost. A common mistake made my inexperienced clover seed growers is to cut the seed crop too early.

How to Cut.—The old self-rake reaper was commonly used in Western Ontario for cutting seed and a few may be found on farms to-day, kept for this purpose. Some implement companies manufacture a clover harvester which is especially designed to cut clover seed. Any farmer who has not one of the self-rake reapers, or a clover harvester need not be deterred from growing clover on this account as other devices can be used. The ordinary mower can be utilized for this purpose. It should be used in the morning while the dew is still on, to prevent the seed from shelling. A better arrangement is the ordinary mower with a table attached to the cutter bar. It requires two men to handle this outfit. A couple of holes are drilled at the back of the cutter bar and the table is attached by means of wire close up to the cutter bar and allowed to drag on the ground behind. A man follows with a fork or rake to keep the clover drawn back on to the table, and pushes it off to one side in windrows. The ordinary grain binder may also be used, the twine and the trip arm may be removed and the two small boards that hold the sheaf may be slackened or removed in order to allow the clover a free course to the ground. This will lay it out in a swath on the stubble in a splendid position to dry and out of the way of the horses and machine. If the clover is high enough to permit of cutting in this way, it is probably one of the best methods which can be used. The windrow can be easily gathered with a barley fork.

The length of time to allow the clover to remain in the windrow will depend on the weather and the condition of the crop when cut. It frequently happens that the crop will have to remain out two or three weeks before it is dry enough to thresh or draw into the barn.

Method of Threshing.—The clover huller is the best machine for threshing the seed. A better job can be done with this machine than with any other, but it is not absolutely necessary to have a huller. A fairly good job can be done with the ordinary grain thresher providing certain adjustments are made. If the clover straw is to be used for feed, it might be well to run the material through, just the same as grain is put through. This will separate the heads and chaff from the straw. The heads and chaff can then be put through a second, or third time, but before putting them through, a plate of sheet iron or a hard board should be placed directly behind the cylinder, closing up all of the back space except about nine inches on the left-hand end of the cylinder. Another board should be placed in front of the cylinder to close up all except one foot at the right-hand end. All small holes in the concaves should be closed and the concaves set as close to the cylinder teeth as possible. This will cause all of the material to pass from one end of the cylinder to the other, which will hull the seed much better than if passed through in the ordinary way. The chaff can be put through two or three times carefully, and it will be found that nearly all of the seed will come out clean. This is not as good as the clover huller, but is very useful when a huller cannot be obtained.

Alfalfa Growing.—Alfalfa has been tried on many farms in Dundas county with varying degrees of success. Those who have not succeeded in growing it have likely either used seed not suited to the climate, or have not given the crop the attention which it demands. Only the hardiest strains will survive our cold winters. The genuine Grimm and the Ontario Variegated have given successful results on farms where the less hardy strains have failed to survive. Where common red clover grows well and gives good results, there is not so much need for trying to grow other clover crops. However, those wishing to try alfalfa should sow only seed of hardy strains, such as those above mentioned. Alfalfa seed can be successfully grown on Dundas County farms. Those wishing to grow alfalfa will secure better results if they have a small plot and grow their own seed. A pound or two sown in drills, say 30 inches apart, and cultivated two or three times in the spring, will yield a sufficient quantity of seed for the ordinary farm. The seed should be taken from the first crop, as it has been found that the second crop of alfalfa in Dundas county does not produce seed successfully, or in sufficient quantity to warrant cutting the first crop for hay and keeping the second crop for seed. Three pounds sown in drill should sow at least one acre. A little alfalfa sown with the regular clover might be a factor in bringing about earlier cutting of the general hay crop. This is already practised by a number of farmers, who state that they have had good success with a mixture of alfalfa and common red clover and timothy. Alfalfa, however, should under ordinary conditions, be cut a little earlier than the common red clover.

THE SILO AN ECONOMIC NECESSITY

The cheapest and best ration for live stock must contain a reasonable amount of succulent feed. An abundance of suitable pasture is unexcelled, and a substitute for this feed in winter or during a drought in summer is essential for greatest production and profits.

In view of the scarcity and high prices of grains and meals, the silo takes on an increased value. For example:—100 pounds total digestible nutrients in corn silage has a net cost of 54c, in bran $2.31, corn $4.02, oats $4.29, etc., when silage costs $3.00 per ton to raise and store and other feeds are valued at present wholesale market prices. Even in these times of expensive labour, seed, horse labour and machinery, corn may be placed in the silo at the above cost. Surely this is sufficient reason why every live stock farmer should consider the increase in silage production.

The adaptability of the silo to various parts of Canada depends on the location, varieties of crops which may be grown, and, to a lesser extent, on the class of live stock maintained. No farmer with two or three cows should think of building a silo, but for a herd containing ten cows or more, or the equivalent, a silo may advantageously be erected. Silage is feed pre-eminently suited to th feeding of dairy cattle. It, however, is a very excellent and cheap feed for beef cattle, sheep and horses. In the majority of the best live stock districts in Ontario and Western Quebec silos should be on every stock farm. In the Maritime Provinces, Eastern Quebec and British Columbia, all large stock farms, particularly of dairy cattle, can use a silo to excellent advantage. If any particular district is not suited to corn growin, peas and oats, peas, oats and vetches, clover, alfalfa, etc., may be substituted for that crop. In the Maritime Provinces, silos on many farms, particularly on large stock farms, are operated satisfactorily.

Silos for Winter Use:—Silage at $3.50 per ton is cheaper cattle feed than mixed hay at $12 per ton. Corn silage is 30% better than shocked corn from field. The same holds equally true of unthreshed oats or oats and peas saved for winter feed. Silage from peas and oats produced milk 20% cheaper than oat sheaves, 30% cheaper than straw and turnips and 40% cheaper than hay. At the same cost per ton, silage is better feed than roots for beef or dairy cattle. Moreover, considering present labour condi tions as well as cost of harvesting, keeping qualities and cost of storage, silage, where grown successfully, is more economical than roots. Silage needs no pulping or other preparation for feeding. Silage for winter use is in itself the cheapest feed, and it also makes all other roughages and grains more palatable, wholesome and profitable.

Silos for Summer Use:—Good pasture, if available, is the cheapest summer feed. Where permanent pastures fail, an annually sown pasture of rye or oats and barley may, under present labour conditions, be the cheapest substitute. However, the use of soiling crops or summer silage may be the only available means of providing succulents. As a rule, silage is more profitable and more cheaply grown than are soiling crops and is more cheaply harvested and fed during the busy season. Milk produced on corn silage and green cut alfalfa cost in feed 66c per cwt.; produced on corn silage and mixed hay may cost 70c per cwt.; produced on soiling crop (peas and oats) cost $1.04 per cwt. With all lots, the heavy milkers received some grain. Where suitable pastures are not available the summer silo provides the cheapest feed and greatest profits.

Finally, the farmer with a silo need never fear losing a crop of clover, alfalfa or late-sown grain. Silage making does not depend on the dryness of the weather. The silo is the cheapest storage building on the farm in proportion to the tonnage capacity. The silo allows the carrying of more stock per acre on the farm and is a labour saver, a money maker and a soil enricher.

This is the season of the year to build more and better silos.

HOW TO KNOW WHAT TO USE

"How shall the farmer know what analysis of fertilizer to use on his crops? It is a case of feeding the crops the same as you feed your live stock. It is common knowledge that sandy soils are relatively short in ammonia, phsphoric acid and potash. Clay soils that have been under crops for some time are usually short of ammonia, fairly well supplied with phosphoric acid and potash, but the phosphoric acid is usually in a slowly available form. Much soils are relatively well supplied with ammonia, but in rather unavailable form—weak in phosphoric acid and very weak in potash.

"Growing crops themselves on soil in good condition are pretty clear indicators of the plant food needed. For instance:

"If the straw or stalk of grain or corn is short and poor there is pretty clear indication of the need of more ammonia or nitrogen.

"If the crops fail to ripen within the growing season, and the grain fills poorly, there is indication of lack of available phosphoric acid.

"If the straw is weak and the grain is easily attacked by disease, and if the potatoes are small and the kernels of wheat, oats and barley are poorly filled, there is indication of a lack of potash.

"Now, if the farmer has in mind the natural crop indications and general knowledge of the characteristics of his soil types, he can determine with a fair degree of accuracy what analysis of fertilizers will be likely to give profit on crops he intends to grow."—Henry G. Bell.

GOVERNMENT NOTICE

CANADA FOOD BOARD.
16th March, 1918.

Order No. 24.

Whereas by order of the Governor General in Council, dated the twelfth day of March, 1918, P.C. 597, it was amongst other things provided that the Canada Food Board shall have power from time to time to order that any food or food products held by any wholesale or retail dealer or by any warehouseman named in such order, shall be forthwith sold in such manner as the Canada Food Board may direct,

And whereas it is advisable to prevent, as far as possible, eggs from spoiling and to prevent the sale of spoiled eggs.

Therefore, the Canada Food Board doth order, that:—

1. No person operating any cold storage plant shall receive eggs for storage or shall store eggs therein without an accompanying certificate in writing from the owner of such eggs, certifying that said eggs have been candled and all bad and unsound eggs removed.

2. No person dealing wholesale in eggs shall receive or demand payment for bad eggs in excess of a margin of allowance of one per cent on the total of each transaction.

3. This Order shall take effect on and after the sixteenth day of March, 1918.

Dated at Ottawa, this sixteenth day of March, 1918.

Canada Food Board,
HENRY B. THOMSON,
Chairman.

THUNDER STORMS WON'T SOUR MILK THAT IS PROPERLY CARED FOR

There is a wide spread belief that thunder sours milk, for testimony is not lacking that after a severe electrical storm, milk that should have been sweet is found to have soured. It is quite natural that the souring should be attributed to the thunder but we shall need to look elsewhere for the cause of the phenomenon. Souring is caused normally by the acidity which results from bacterial growth and sterilized milk will not sour in a thunder storm. Neither will milk that is kept on ice sour during a thunder storm. The probable explanation lies in the fact that during storms of this kind the temperature is raised sufficiently to favor the multiplication of milk-souring bacteria where the temperature is not regulated by the use of ice.—W. H. Feldman.

If possible, medicine for sick fowls should be administered in the food or drinking water. Catching a hen and forcing medicine down her throat throws her into such a nervous state that the excitement often does more harm than the medicine does good.

HORTICULTURE

THE SECOND SPRAY FOR NOVA SCOTIA APPLE ORCHARDS 1918

A number of different formulas have been used in this spray and as there is somewhat more danger of injury at this time than in the previous spray, more care must be exercised in the way the spraying is done.

Regular Formula.—Lime sulphur, commercial concentrates 2 1/3 gals. to 100 gals. of water with arsenate of life 2 lbs. to 100 gals. is used at this time. In spraying with this combination, care should be taken to direct the spray at the upper surface of the leaves, or some injury may result, particularly under certain weather conditions and in some locations.

Substitutes.—Bordeaux mixture according to the Thompson formula (2-10-40) is preferred by many for this spray on acount of its safety. This material has been used by a number of growers for two or more years and has resulted in a good crop of clean apples. It has bee found to be perfectly safe to use on foilage at this time, causing no burning or dropping of the fruit. The fruit may not be of such bright color as when other sprays are used and there may be e very sligth amount of russetting, chiefly of the "netting" type. The foilage on trees sprayed with this combination has invariably been excelent even when used four times in sucession. without the yelowing or bronzing of the leaves that is likely to follow the repeated use of the 4-4-40 Bordeaux. The 4-4-40 Bordeaux used at this time will give good control of scab, but may result in from 10 to 60 per cent. of slight russetting, together witha bronzing of the leaves, especially if preceded by a similar spray.

Arsenate of lime ¾ lb. or arsenate of lead 2 lbs. to every 40 galons of spray may be uesd, the chief consideration beig one of cost, since both are perfectly safe to use with this combination.

Modification for a Bad Outbreak of Canker Worm

If a very bad outbreak of canker worm is anticipated the most satisfactory spray is arsenate of lead 10 to 15 lbs. to 100 gals. of water. In the interests of safety it is better not to employ a fungicide at all when this is necessary, particularly as arsenate of lead in this strength has considerable fungicidal value.

Modificatoin for Green Apple Bug

In spraying for green apple bug, it is necessary to use a very heavy drenching, driving spray covering the under as well as the upper surface of the leaves, applied at a very high pressure. Most sprays aplied in this manner will cause no injury but the safest combination we have tested to date consists of soluble sulphur 2 lbs., blackleaf 40, ¾ pint to 1 pint, water 100 gals. To this we have added a soft fish oil soap at the rate of 4 lbs. to 100 gals. This causes the liquid to spread better and helps to liberate the nicotine. If the soap cannot be obtained, hard soap shaved fine dissolved in water, will do, but this takes time and some kinds cause burning. Probably soap powder poured right into the tank would do the work but we have not tried it as yet. **No poison should be added to this mixture or burning will result.** If the orchard was given a thorough spraying with poison in the preceding aplicationi it will not always be necessary in this one, as the foregoing mixture kills many biting insects by contact.

If absolutely necessary to use a poison, or if another bug spray is to be given, use lime sulphur instead of soluble sulphur and leave out the soap. Reduce the strength of the poison, however, as this mixture is more likely to cause injury. This is the most important spray for the bug and unless well done is worse than wasted. To attain success begin to spray just as late as possible before the Gravensteins open, use twice as much material and twice as much time as in ordinary spray and spray each limb from every angle. Use as much pressure as you can obtain even at the risk of some mechanical injury. Unless it is intended to follow all th eforegoing faithfully, it is far better and will save money not to make the attempt. Even where the green apple bug is not present a spray of soluble sulphur has been employed with success by growers as a regular spray. The folowing formula may be used:

Soluble sulphur	3 lbs.
Arsenate of lime	1½ lbs.
Lime	25 lbs.
Water	100 gals.

Application

In using lime sulphur direct the spray at the upper and not the under side of the leaves, standing well off from the trees or on top of the cab so a snot to cause mechanical injury with the strong stream from the spray gun. In spraying for green apple bug about twice as much material will be required as is ordinarily applide and as much pressure as can be obtained.

Pests Destroyed

In ordinary years this is the most important spray and should never be omitted. If the first spray has not been given it should be applied a few days before the blosom buds are showing pink at the top. This is the time that apple scab usually begins to show and especial care should be exercised in its application to prevent this disease getting a foothold on leaves and blossoms stems and causing a beavy drop of the fruit. Bud moths, fruitworms, canker worms, tent saterpillars and brown-tail moths are among the biting insects destroyed and the residue tfrom this spray is of service in the control of the codling moth in Nova Scotia. In many places this season the canker worm will be the most important pest to control at this time, and arsenate of lead as recommended is the best method to employ.

Notes on Second Spray

Do not use Arsenate of Lime alone.

Do not add soap to a combination containing Lime Sulphur.

If a weaker dilution of lime sulphur is used than that recommended either the quantity of Arsenate of Lime added must be correspondingly decreased or else lime must be added to prevent leaf yellowing.

Five pounds of stone or hydrated lime added to the straight lead arsenate, 10 to 15 lbs. to 100 gals., will prevent yellowing of foilage.

Do not omit the stone or hydrated lime from the soluble sulphur arsenate of lime combination.

Do not allow Soluble Sulphur to stand exposed to the air, keep in a closed container.—G. E. Sanders, Dominion Entomological Laboratory, Annapolis Royal, N. S.

PRUNING AND SPRAYING A NEW YORK ORCHARD

(From American Agriculturist.)

As soon as practicable after our fruit is picked we begni pruning. Our object is to have low-headed trees, open as much as possible to admit light and sun and as nearly symmetrical as we can make them. In heading back our trees we begin with the central branches, cutting out enough wood to bring our tops about 24 feet from the ground. . We then graduate down on the sides of the tree.

When finished there is just enough variation between the branches to give perfect balance and form. Often will be found in old apple trees many vacant spaces 6 or 8 feet in size without any branches. These spaces can be filed in the second and third year after heading back the trees by pruning back the water sprouts which break out al over the branches which have been severely pruned.

I cut these sprouts back to about 4 inches, leaving my last cut on the outside of cut, so as to throw my new branch out ward from the tree centre. The following summer when thesething which we have no use for in our sprouts have made about 8 inches oforchard. My object of removing this growth. I pinch back the ends so asscale bark is to give a better chance to start new lateral branches to helpof combating the various forms of balance my future limb, also checkingscale insects that find a safe harbor the growth, which will casue fruitunder the loose bark, where the spray-space to appear, after which the newing material can touch them. growth will not be so rapid. We now spray our trees, which I

We are also very careful not to al-find to be a very important part of low any two branches to rub, or rest,having a sucessful orchard. Spraying on one another. I generally take outconsists of three things, which are: the weakest branch, if it can be doneA good spray pump, good material, without deforming the tree. We haveand, last but not least, thoroughness. now finished pruning our trees, andAny good spray pump that can hold finding a lot of loose, shaggy bark at-125 pounds of pressure can do the tached to trunk and branches, we usejob, with good spraying material and a tree scraper, with very little pres-a better man at the end of the rod. sure to remove the bark or scale bark We spray any time during the winwithout injuring the new, true bark. Iter, when our material will not freeze find that if the new bark is severelyon the trees. In putting on the spray scraped it makes an excelent breedingmaterial, my method is to start at the place for disease and canker, some-to pand work down, thereby saving

Be Sure of Your Weight

Be certain the goods you buy and sell are correct weight. Mistakes are always possible but accurate weight is assured by

Fairbanks Union Scales

They save their cost every year by eliminating short weights in buying and overweights in selling. They are the most convenient size scales for general light weighing anywhere.

They replace the old time spring balance scales condemned by the Canadian Government.

Complete with tin scoop, 10½" x 13½" platform, single brass beam and extra weights. The scoop capacity of Fairbanks Union Scales is 30 pounds by half ounces — the platform, 240 pounds by quarter pounds.

They are strong, compact, simple and guaranteed absolutely accurate.

Write our nearest branch for information and prices of scales for any weighing purpose.

The Canadian Fairbanks-Morse Co., Limited.

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GROW STRAWBERRIES

In the rush of other work, do not forget to set that new bed of strawberries this spring. Many growers are cutting down their acreage on account of labor difficulties and the high price of other crops. Production for the next few years will be cut in two and berry prices are sure to be high. Our advice to our fellow Fruit Growers is, grow all the grain you can, but DON'T GIVE UP THE STRAWBERRY. Among other varieties we recommend Senator Dunlap and Warfield at $4.00; Sample, Arnout, Buster and Glen Mary at $5.00; Wm. Belt, Dr. Burrell, and Bubach at $6.00 a thousand. The great everbearer, Progressive at $1.25 a hundred. Send a card for our free Catalogue.

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A Sterling Government Investment

You help yourself, your family and your country when you buy Victory Bonds.
Yourself, because they provide the safest and most convenient form of investment—with an interest return better than many speculative investments.
You help your family in the event of your demise, as the investment is easily looked after and contains absolute assurance of prompt and continuous payment on interest dates, and prompt repayment of principal at maturity.
Or the Bonds may be borrowed upon or sold any moment if money is urgently needed.
You help your country by providing the sinews of war.
If you have money for which you have no immediate use that is not drawing interest or drawing only 3% interest invest it in Victory Bonds.
AND REMEMBER VICTORY BONDS ARE FREE OF FEDERAL TAXATION.

A $50 Bond costs.....$ 49.45
A $100 Bond costs..... 98.87
A $500 Bond costs..... 494.37
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and accrued interest in each case. Larger amounts in proportion. Interest payable every six months at all banks without charge.
Upon receipt of your application we will send bonds to your local bank, where you may inspect them before purchase, and you may pay us for them through your local bank without extra charge or exchange on cheque. Address Dept. F.

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the material, which is bound to run downward. Our apparatus consists of a 100-gallon tanak, mounted on a cut-under 4-wheel wagon. We have an elevated platform, 8 feet high on the truck. The driver is stationed up there with a 10-foot spray rod, and ca ncatch the tops of the trees on both rows.

On the ground I have two men, each with a 10-foot rod and 60 feet of one-half inch hose, which gives them a chance to work half-way around the trees by the time the driver has sprayed the tops. We make two sprayings, wintetr or early spring, with scalecide, and at the second spraying we use bordeaux and arsenate of lead, as the blossoms begin to fall. By using the above mixture we control both fungus and insects with one spraying.

Cultivating the Orchard

We have now pruned and sprayed the tree. Plowing comes next. We plow, cutting about 4 inches deep near the trees and 6 inches as you work away from them, being careful not to cut any large roots. After the plow we use the cutaway harrow and pulverize the sod. Use your spike-tooth harrow and level the soil. To seed aliske clover, brush it in and roll the earth down firm.

Watch the clover grow, and when in bloom cut and let it lie as you cut it. If your soil has any life in it at all, you will have a second stand. In my orchard I leave this second crop to seed, then cut it down and leave as cut These two cuttings will give you a good mulch all over your orchard I repeat the above every three years, and find my trees appreciate it by giving me a crop of apples year after year, also a good crop of leaves which help enrich the soil.

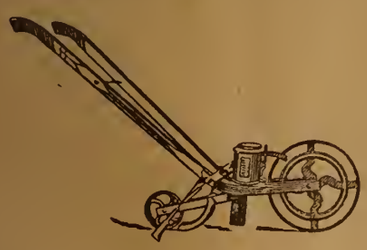
TREES INJURED BY MICE OR RABBITS CAN BE HEALED

If a tree is badly girdled by mice or rabbits it usually dies if left untreated. If, as soon as the wound is noticed, it is cleaned and covered with grafting wax or some paste, such as sulphur, cowdung and clay, and wrapped with a cloth to exclude air and prevent the wood from drying out, there is a posibility of saving the tree if the girdle is a small one, as the sap which rises through the wood will continue to do so, an dreturning through the inner bark in na elaborated condition will cause growth to be made all around the upper part of the wound and if the latter be not too large there is a chance of its healing over. If, however, the wood becomes dry before the bandage iis put on, the tree will almost certainly die, although it may continue to grow throughout the season. When the wax and bandage are applied the tree should be headed back considerably to lessen the amount of transpiration of moisture as there will not be as much sap rise as if the tree were uninjured and the wood will thus dry out sooner than if it were headed back. If the girdle is near the ground in addition to covering the injured part with wax or cowdung and clay it is advisable to mound up the soil about the tree to cover the wound and thus help to prevent the wood from drying out. The mound should be up about six inches above the wound and be about two feet across at the base.

At the Experimental Farm girdled trees are frequently saved and more surely saved than by the above method by connecting the upper and lower edges of the girdle with scions which are inserted about an inch apart all around the trunk This is known as bridge grafting. The more scions that are used the more quickly they will grow together and form a new trunk, but two or three scions successfully grafted on a small tree will carry enough sap to keep the tree alive. A slanting cut is made at each end of the wound in the uninjured wood in which the ends of the scions are to be inserted Strong, plump scions of the previous season's growth—not necessarily from the same tree, nor even the same variety—cut a little longer than the distance between the slanting cuts, are made wedge-shaped at each end. They are made a little longer than the distance between the cuts in order that when inserting the ends into the cuts it will be necessary to bend them, and thus have them under pressure, which helps to keep them in position After inserting, some of the inside bark of the stock should remain in contact with the inside bark of the scion, as it is here, or at the cambium layer, where union takes place As soon as the scions are all placed, the wound, especially about the ends of the scions where inserted in the stock, is covered with grafting wax. The ends are also at th esame time bandaged with a piece of sacking around th etrunk to aid in keping the scions in place and to exclude the air. The tree sould be well headed back. The scions, if properly made and in-

(Continued on page 568)

GARDEN SEEDERS!



A DANDY FOR TURNIPS

Makes the drill, sows, covers and rolls the seed while you walk. Does the work of two men in half the time. No better seeder built for the accurate sowing of turnip, carrot, cabbage, beet, pea, corn and all other kinds of garden seeds.

Price $10.50 Delivered at Your Station. Order Today.

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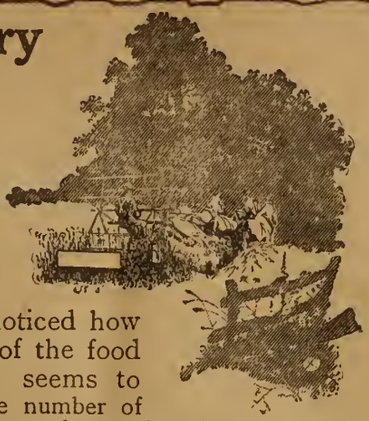

HAVE you noticed how discussion of the food supply situation seems to center around the number of acres it is possible to plant rather than around the harvesting of those planted acres?

It is an unconscious, but none the less wonderful, tribute to the genius of the inventors of the reaper and binder that the public takes the harvesting of the greatest grain crop ever planted as a matter of course. The sole question now is, "How many acres can we plant?" The power and help required by the planting will be amply sufficient for the harvest where **Deering** binders and binder twine are used.

And, where they are used, the harvest will be complete. No matter whether the grain be tall or short, heavy or light, standing or down, lodged and tangled, a **Deering** binder cuts and binds it all without waste.

It is an easy matter to be fully prepared for harvest. Buy the largest binder you can use. The larger sizes conserve labor. Buy a new machine if there is any question about the efficiency of the old one. A new **Deering** is absolutely reliable.

We furnish promptly either new **Deering** binders or repairs for old ones. Do not hesitate to call on our organization for any help we can give in the harvesting of this year's grain crop—the most important crop ever raised. See the local dealer or write to the nearest branch direct—early.

International Harvester Company of Canada, Limited

BRANCH HOUSES

WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

EAST—Hamilton, Ont., London, Ont., Montreal, Que., Ottawa, Ont., Quebec, Que., St. John, N. B.

RAISING CROPS ON RAILWAY PROPERTY

Canadian Government Railways Urging Employees to Cultivate on Right of Way.

Employees of the Canadian Government Railways located conveniently near sections of the "Right of Way" where the soil is suitable for cultivation, are being urged to apply for such land as they can cultivate, and do their utmost to boost along the "Greater Production Movement."

In places where it is not feasible for employees to utilize arable land along the "Right of Way," the owners of property adjoining are urged to make proper use of it, not for pasture or grazing, but for the purpose of raising such crops as will materially add to the food supply.

The question of food is vital and pre-eminent. Next to munitions, the Allied countries need food. Everything in the way of food that can be grown is an important contribution to the Empire's needs. Whatever is raised for home consumption releases as much more for export. If our people generally raise their own potatoes and garden truck, the farmers will raise more oats and grain and buckwheat. On comparatively small patches of land enough can be grown to feed several people, and if many individuals make even what might be considered a humble effort, the total result will be of vast importance.

In many sections there is excellent land along the right of way. tI has been the practice in some localities for station agents and section men to utilize strips convenient to their neighborhood for garden patches, and for growing oats, hay and buckwheat or potatoes. Last year there was considerable gardening, but when the total acreage of land available is considered, the agricultural attempts were really insignificant. It is felt that many miles of this land could be brought under cultivation, and the railway is showing its earnestness in the matter by offering the use of whatever land is available along the right of way.

Applications for railway land can be made to the Superinitendent of the District. Preference will be given first to employees and then to the property owners adjoining. In cases where the right of way is through unoccupied land, any person who will guarantee a bona fide intention of raising crops may make application.

All enquiries regarding land permits addressed to the Railway will be promptly answered and the fullest information given.

DAIRYIN.G

MAMMITIS OR GARGET

The syllables "itis" affixed to a medical term mean inflammation of the part involved. Mammitis means inflammation of the mammary gland, or udder. Other examples are appendicitis, inflammation of the appendix; enteritis, inflammation of the bowels; nereitis, inflammation of a nerve; gastritis, inflammation of the stomach; bronchitis, inflammation of the bronchial tupes. Gaget is the term commonly used for mammitis, and should be taken to mean that trouble. Many dairymen, however, apply the word to the changed milk which comes from a quarter attacked with mammitis. They call the milk garget and the disease caked bag.

The medicinal plant known as poke root (phytolocca decandra) also is familiarly known as garget or garget root, for the reasons, we assume, that it is a popular and very valuable remedy for garget.

The Symptoms of Garget

Let it be clearly understood at the outset that there are several forms of mammitis, and that garget, as a term, should be applied only to simple mammitis, in which fever usually is absent and no infective process present.

Simple mammitis is characterized by swelling, redness, and comparatively slight heat and tenderness of the quarter attacked, or of the entire udder. Usually but one quarter is involved. The milk changes in consistency, becoming thin and containing clots, as whey separates from the coagulated milk or curds. The milk does not have a bad odor and does not contain pus. The cow rarely has fever, does not, as a rule, lose appetite, nor is she noticeably lame, but she may show slight straddling or stiffness of the hind legs. There is a considerable shrinking in milk, but in some of the mildest attacks the swelling quickly subsides and the milk again becomes normal in consistency, appearance adn amount. The latter cases are the most pu zling, as no cause is apparent.

In more severe cases blood may be found in the milk, hard lumps form in the quarter, tending to remain permanently, and secretion of milk subsides or gradually lessens. It is common to find in even the apparently recovered quarter that the gland tissue has thickened and hardened. The reason for this that true secreting mammary gland tissue has been wholly or partially replaced by tumor or scar tissue, and where this has occurred the cow will be subject to a worse attack at her next calving, or following any influence that commonly causes garget.

It should b eremembered, too, that simple mammitis improperly treated, and sometimes in spite of the best treatment that can be given, tends to assume the graver destructive form termed acute, infectious, or purulent mammitis (or mastitis). There is also a form known as contagious mammitis, and the infective forms may end in gargrene, which often proves fatal.

Common Cause of Garget

In many instances no cause can be assigned for an attack of simple mammitis, but in our experience it usually is blamable to one or the other of the following causes: Chill, bruise, or other injury to the udder; sudden change of feed; excessive use of protein-rich feed; rough, irregular or incomplete milking, often resulting from a sudden change of milkers; coming in heat; indigestion from any cause.

The more severe forms of mammitis are caused by infection from germs which enter the milk duct of the teat, or find entrance at a wound, or spread inward from a sore on the tip of the teat. Infection often is carried by the milker's hands, introduced by a milking tube or other instrument, or contracted from a contaminated floor, gutter, yard, pond or mud hole.

Measures of Prevention

Carefully avoid causes mentioned in the foregoing, and, in addition, that all forms of mammitis may be prevented endeavor to maintain sanitary conditions about the cows. The average dairyman who also is his own farmer and often his own chore boy, cannot well wash the udder and his hands before milking each cow, but he can at least wipe the udder with a clean, damp cloth, and see that his hands are clean and finger nails trimmed before starting to milk. These simple measures pay well, for they will tend to prevent many a sase of garget. It also is a comparatively easy and practicable matter to keep the stall floors clean and freshly bedded, and to prevent the cows from dragging their udders through filth and mud on their way to the stable and to have the stanchions so adjusted and the stall floors of such width that cows will not trample upon one another's teats.

Another preventive measure, which we have often introduced with good results in stables where slight attacks of mysterious garget have been prevalent, is the careful stripping of the udder of each cow by a special milker a few minutes after the regular milker is done. See to it also that cows do not lie upon hard, cold cement floors. Cover at least the rear part of each stall with cork brick, or boards which are to be kept clean and well bedded. Lastly, instantly isolate a cow when anything goes wrong with her udder and keep her isolated until perfectly recovered. Also milk such cows last, or, better still, have them milked by one who does not milk the well cows. Were this made the invariable rule in every dairy stable, mammitis, which at present is a terrible scourge in many dairies, would become less common and far less ruinous in its attacks.

Treatment of Simple Mammitis

Methods of treatment are many and different, and what one man considers all right another calls all wrong. Veterinarians, too, differ in their opinions upon the subject, and in their methods of treatment. Forexample, some strenuously object to the administration of aphysic, while others believe in a physic. Some advocate inflating the udder with air solutions, while others decry such measures. Each dairyman and practitioner has his favorite method of treatment. We cannot, therefore prescribe a method of treatment that will be approved by everyone, nor is that posible in prescribing for any diseases. We can, however, confidently offer a few hints on treatment which experience has taught us to be sane, safe and satisfactory.

The first bit of advice we have to offer is that treatment, to be effective, must be instant, thorough and persistent. Delay spells disappointment and disaster. More can be done in the first 12 hours of treatment in every case of garget than in all time afterward. Unless immediate and perfect recovery results from treatement, the utility of the cow is seriously impaired anad recurrence of attack almost certain.

The second suggestiin, and of about equal importance, is that all fluid should be gently stripped from the udder every two hours. Next in imsage of the udder tigether with hot fomentations (bathings), and applications of sothing and slightly stimulating lotions or ointments.

The Medicines to be Used

Facetiously speaking, elbow grease is most commonly adivsed, and there is no denying that massage, already prescribed, is of supreme importance At the outsct of an attack we believe in giving a full dose of epsom salts, and following it twice daily with from one to four teaspoonfuls each of powdered saltpeter and poke root administered i nany way found most convenient.

Local treatment consists in supporting the swollen udder with a bandage around the body in which may be packed spent hops or cotton waste to be kept saturated with hot water, or a poultice of hot cookel oatmeal. If help is available, constant fomentation of the udder with hot water will usually do more good than a poultice. Frequent massage of the udder with the palm of the hands upon which oil or vaselinie has been applied will be found beneficial, not forgetting frequent stripping away of milk or other fluid.

A mixture of one teaspoonful each

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of turpentine and fluid extracts of belladonna leaves and poke root with two tablespoons of lanolin or lard will be found effective. Rub it in twice daialy. If hardnesss of the udder remains after the acute inflammation subsides, rub in iodine ointment once daily, and if that does not give satisfactory results, sbubstitute a mixture of one part of mercurial ointment and three parts of lanolin, lard, or soft soap.

UDDER AND TEATS NEED GOOD CARE IF AILMENTS OCCUR

Whether it is a beef or dairy type of cow a healthy, well balanced udder is an important feature. Many men, over-confident of their ability to select good cows have passed poor judgment because they slighted this point of all points. Examine the udder carefully, milk the cow and satisfy yourself that the quarters of her udder are all healthy and working properly.

Comfortable stalls and standing platforms are an important factor in preventinig injuries to the cow's udder and teats. Provide plenty of room for the cows to lie down and stand up without stepping on the teats or udder of the cow in the next stall. Build the platform long enough so that the cows can lie down without their udders hanging over the sharp edge of the planks or concrete. At calving time put the cows in box staalls where they can step about, lie down and get up without bruising their udders.

One of the most frequent causes of caked and inflamed udders is too much feed of the wrong kind the few weeks before calving. If the feeder knows how to feed and care for dairy cows there is but little danger of udder troubles. When cows are fed heavy rations of grain right up to the time parturition there often follows troublesome sieges of udder ailments. As a rule successful feeders prevent their cows from having caked and feverish udders at the time of calving by feeding and handling them in the right way. No harm will result from feeding libe al grain rations, if the cows need it, up to within two or three weeks of calving, but after that time it is better to reduce the grain ration and feed more silage, clover hay and a little bran and linsedd oilmeal. Even the rations of silage should be cut down one-half for a few days previous to calving. but hay should be fed liberally. all the cow will clean up. After calving, bran and small quantities of oilmeal may be fed in moderate quantities for a few days.

A warm bran mash with a few whole oats and a little oilmeal in it is one of the best feeds that can be given a cow shortly after calving, for these feeds tend to put her digestion in good condition. The bran is light and laxative, the oats are one of the best fees to strengthen the reproductive system, and the oilmeal is laxative. Such feeding gives better results than dosing and doping with Epsom salts and linseed oil. Further, a pail of warm water, especially in cold weather, is very desirable for the cow's system is likely to be a little feverish at this time and demands water. In summer water from the water basins or stock tank may be used, but too much cold water should never be given a cow at the time of calving, as the chilling effect of the water is harmful.

All heavy milkers sould have good care and proper attention should be given to the care of the udders immediately after calving. Manipulating the teats and udders with the hands and drawing the milk carefully is preferable to allowing the calf to nurse. Warm water is an excellent remedy for caked udders, and carborated vaseline is one of the best remedies for sore and chapped teats. If the condition of the udder is not improved by bathing in warm water and maipulating it with the hands, rub in some lanolin (wool fat) with some belladonna or camphor added. Keep the cow in a warm, well bedded stall and see that she is milked regularly and carefully. Unless the congestion is relieved propmtly it is very apt to develop into more serious trouble and the loss of one or more quarters.

As the milk glands are under direct control of the nervous system it is always better to avoid any excitement or conditions which affect the nervous system and re-act upon the milk-producing glands. Any undue disturbance of the normal distribution of the nervous force will divert some of the blood supply from the milk glands to some of the other parts of the body and diminish the milk flow. The well known phenomenon of "not giving milk down" the milk is the milk is the result of the nervous tone in the gland brought about by some sort of excitement. Unless the cow is comfortable and in perfect repose the secretion of milk will not take place normally. The lesson to be derived from this is that the cow should be treated with kindness and kept free from excitement.

An injury to the udder from a blow or a puncture by a snag is almost sure to prove serious unless prompt treatment is given. To prevent infection and reduce inflammation the writer has had good results from using tincture of iodine, followed with vaseline. The vaseline prevents the skin from becoming dry and cracking. The same have proven effective in treating, wounds to the teats. For scratches or cases of chapped teats the use of carbolated vaseline is preferable especially when applied by the average dairy farmer.

Severe cases of garget frequently result from neglecting to give the udders and teats proper attention. Dairy farmers should endeavor to prevent this infection from getting in their herds or spreading from one cow to another in case they have one or two cases. If you have suspicion that a new cow or any member of the herd is infected she should be isolated, milked by someone who does not milk any of the other cows and given good care. And be careful not to use a milking tube unless it is absolutely necessary, and see that the tube is properly sterilized and disinfected every time it is used. Many feeders get good results fro mfeeding one-half ounce doses of hpposulphite of soda once or twice a da yto a cow suffering from an infected udder. As a rule garget can be held in control by effective preventitive measures. Give prompt attention to the cow the first time you notice anything wrong with her udder or teats.—C .F.

GIVE THE COW A REST

Milk from cows which are milked rigth up to the time of calving frequently has an unpleasant odor and an animal-like taste, or may even be salty or bitter. For this reason, and because the udder and other tissues vital to maximum milk production should have an oportunity for rest before a new period of lactation begins, all milk cows should be "dried up" at least one month before parturition is due.

THE "ACID" TEST OF VALUE

At an auction sale the buyer makes the price.

Auction prices are apt to be lower than the real value warrants, rather than higher.

In any case, auction prices represent the estimate of value placed on the article by the buyer and not the seller.

During the past few months, the cow owner's appreciation of the unusual values offered in De Laval Cream Separators has been demonstrated in a most remarkable way.

From one state after another have come reports of the sale of De Laval machines at farm auctions—machines which had been in steady use for several years—at prices, in most cases, only two or three dollars less than the sale price when new; sometimes at practically the same price at which the machine was sold when new; and, in several instances, at even more than the original list price.

In February, at a Missouri auction sale a De Laval in use two years was sold for $1.25 above the original purchase price. In Kentucky a farmer paid for a De Laval $2.00 more than the original price, at an auction sale. Last January, in West Virginia, a second-hand De Laval sold at auction for $2.50 less than the original catalog price. On January 15th, in Ohio, a De Laval machine in use a year was sold at auction for exactly the same price it brought when new, and at another point in Ohio a De Laval in use several months brought several dollars more at auction than the original list price. In the province of Ontario, early in April, a De Laval in use since 1916 brought at auction a price $5.00 higher than the owner paid for it when new.

In contrast with these prices paid for De Lavals at farm auctions, it is interesting to note that when other makes of cream separators are offered they are usually listed simply as a "cream separator," and not by name. Often there is no bid for such machines and their usual auction prices run from $10 to $15. We have never heard of one that sold at auction for half its original cost.

Perhaps you may not have had an opportunity to learn of the cleaner skimming, easier turning, the great durability and the splendid service given by the De Laval machines, but here is the strongest and best sort of evidence that those who do know cream separators appreciate that the man who buys a De Laval gets good and generous value for the purchase price. Ann further, that even after a De Laval has been several years in use, it is practically as good as new.

If you are without a cream separator or in need of a new or better one, why not see the local De Laval agent immediately? If you don't know him, address the nearest De Laval office as below, for any desired particulars.

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SOME COMMON DISEASES OF DAIRY CALVES

A very large percentage of all the calves that are raised for the dairy go wrong during the first few months of their career. This is usually the result of ignorance of the needs of a calf on the part of the dairyman, or neglect to comply with what he knows are imperative demands in order to insure success.

Calves brought into the world by healthy stock are almost invariably well born; in other words they are healthy and in a position to go on and make good. Unfortunately, however, all dairymen are not watchful as to the calf's condition and careful to supply its needs.

Calves allowed to run with their dams and get their food in the natural way are rarely sick, and in order to get the best results in rearing these young things it is best to follow as closely as possible the natural methods

Good calves can be raised by hand, but unless great care is taken to have the food approximate to that of the dam's milk and other conditions relative to cleanliness of utensils and quarters in which they are kept, sooner or later troubles of one kind and another will be the inevitable result. By following the correct methods in the practice of raising calves, it is quite easy to guard against most troubles that cause loss in this kind of stock. On the other hand, however, carelessness or indifference will just as surely bring disaster and render the business unprofitable.

Indigestion

Indigestion is perhaps the most common of all diseases that afflict the calf and is almost invariably caused by a bad system of feeding. Many farmers take the calf from the cow at once after birth and teach it to drink; give it half a dozen feeds of milk from its dam out of a clean or dirty pail, cold or warm as the case may be, and then put it on skim milk. This treatment is practically sure to bring on the above mentioned disease.

The symptoms vary somewhat according to the cause. General unthriftiness is sure to be one of the signs of this trouble. In addition there is likely to be more or less constipation, folowed by diarrhoea. If the calf does not get relief it may drag along for some time, but is liable to drop off at any minute.

In tre treatment of this disease the first thing to do is to correct the feed. Nothing of permanent benfit can be done for the poor creature until it has been put on a reasonable ration. The calf may be one, two or three months old and should be on quite strong feed; but even so it is best to go right back to the beginning again, commence all over and begin right. Put it on a new milk diet and keep it there until it is gaining nicely. Before commencing on the new ration, however, it is best to administer from two to four ounces of castor oil to calves from one to two months old.

After they begin to gain nicely, put a litle linseed or flaxseed meal in their ration and substitute a small quantity of skim milk, increasing it each day, and reducing the whole milk until in about two weeks the calf is getting all skim milk. Now keep on with this, at the same time adding laxative and easily digested food, making all the changes gradually.

Scours

This disease while being frequently the direct result of indigestion brought on by bad feeding, is not always caused in that way. It may be brought on by exposure to cold rains, lying on cold, wet ground, suddenly changing the food, or it may be the direct result of contagion from disease germs such as white scours.

In any case the first thing to do is to find out the cause and remove it. If it is indigestion, correct the ration; if it is exposure, keep it in a warm, dry place, and if it is white scours the treatment must be quick or you are likely to have a dead calf on your hands. For any of the different phases of this disease give a dose of castor oil as recommended for indigestion, and for white scours add one dram or one teaspoonful of tincture of laudaunm. If this does not give relief, give the following: Tincture of laudanum one dram, lime water 2 ounces or 4 tablespoonfuls. Give as a drench in a little warm milk three times a day until relieved.

Constipation

This trouble in calves is almost invariably the result of improper feeding in much the same way as indigestion. The milk is frequently taken away from them when altogether too young, coarse, dry, indigestible and innutritious food is given and not enough liquid is taken into the stomach to supply the needs of the body.

The remedy is to give a dose of castor oil or raw linseed oil to get rid of the old dry mass, and then feed on succulent, easily digested and wholesome feeds suited to the age and development of the calf. When suculent grass is available and the calf is two months old, let it out during the day to feed, putting it in at night if the ground is wet or cold. If it is winter, feed bran, linseed meal, roots, ensilage, fine clover or alfalfa hay and like feeds that will have a soothing effect on the bowels. Plenty of pure water should be at hand at least three times a day, and better still, all the time if convenient. Warm the water a little and the calf will drink all the more of it.

Lice

These pests are very troublesome in young stock, particularly those a few months old that are not thriving well. For this trouble mix one part of helebore and four parts of fresh Portland cement together, and with an old pepper box or small tin can, with holes punched in the lid, sift it on from head to tail along each side of the spine. Repeat in a week or ten days.

Ring Worm

These are caused by a tiny insect that burrows in circles in the skin, destroying the hair.

For this use citron salve, rubbing in a small piece over the spot and into the surrounding hair. Rub it all in as it is poisonous. One aplication is usually sufficient. Another remedy is crude petroleum oil aplied to the spot with a brush three times a week until a cure is affected.—W. J.

BREEDERS OF DAIRY CATTLE WHO HAVE MADE A SUCCESS HAVE BEEN GENEROUS FEEDERS

The question as to which breed will prove the most profitable from a breeding standpoint involves several important questions, besides that of the relative efficiency in the production of milk and its products Apart from the importance of adaptation of type to local conditions there is a great advantage in community breeding. If the dairy farmers of an entire community are interested in producing pure-bred cattle and grades of a single breed that is well adapted to the conditions the region becomes known as a place where such cattle an be purchased both for breeding and commercial purposes. Hence all of the surplus stock can be sold at higher prices and with less expense for advertising than if only a few of the dairy farmers were breeding the one breed. Success in breeding registered cattle is much easier when one is located in a community where a number or progressive dairy farmers are working with one breed.

Few Good Females Desirable

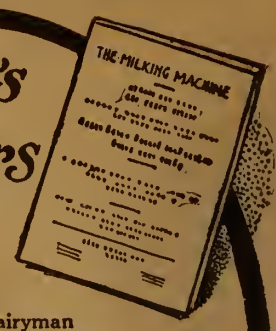
In buying foundation femaels for a herd, individual records as well as approved blood lines should be given as much attention as age or price. As a rule, other factors being equal, it is better to buy females of breeding age, either with calves at foot, or safe in calf to sires that are bred right to nick with them. When one gets a good young cow with a creditable milk record he is getting something for his mone. One eliminates risk, depreciation and uncertainty; and makes a fair start toward making the business pay. Many a breeder has made a good beginning from the purchase of a few old cows. It is the old cows that many experienced breeders prize so highly. A close study of the prominent dairy performers, looking up the age of their dams, would be enlightening as well as interesting to many breeders who think it good management to sell their best cows before they grow old in their herds. To secure a few head of desirable females means a lot of hard study and close investigation, but unless a man will go about the proble mintelligently he had better keep his money in the bank and devote his energies to some other line of farming.

A Tried Sire is Preferable

The greatest improvement in breeding must come largely through the bull. As a rule, the tried sire, one that has served his time in some established herd and is being sold to make room for one of leser age, is a safer nvestment than a young animal. By studying the form and character of some of his offspring one can form an accurate idea of his value as a sire, and there is less risk to run than when a perfectly untried sire is purchased. When an old sire is selected, the beginner will be assured of a certain degree of success until he has got his bearings and become sufficiently familiar with the type and character of the animals of the herd with which he is working to select the sorts that find favor among the most liberal buyers. From any point of view, the use of a tried sire is preferable. He will prove an anchor in time of trouble.

One of the country's most famous breeders owes his success to the use of one excpeionally good aged bull. He has been searching for several years for another bull that will prove equally valuable as a sire. It is the well defined conviction of the owner that he must secure a sire whose calves will be as meritorious as those of th eone used so long or else his herd cannot be kept up to its present high standard. This breeder, who won fame and fortune through some of the heavy milking daughters of his famous sire, has more of a problem than merely replacing the bull that has done son well a sa sire. He must find a bull whose characteristics and triats nick well with the females of the first great sire. This makes the situation omre perplexing, but the owner is seeking diligently, studying good bulls and consulting milk records and experimenting with a number of young bulls in a moderate way to find out what kind of daughters they will produce. No doubt before the old sire shall have outlived his days of usefulness a worthy young sire will have been discovered. The real value of a tried sire in rounding the corners, so to speak, of a herd of cows from vari-

The Government's Advice to Farmers on Cows



In the interest of every farmer and dairyman the Dominion Government has issued a special circular pointing out the value of the Milking Machine under the present conditions of labor on the farm.

Mr. J. H. Grisdale, B. Agr., Director of the Dominion Experimental Farms says, "The present is no time to let things stand in the way of increased production, and every farmer with a herd of twelve or more cows should seriously consider the installation of a milking machine. Three years' experience of mechanical milkers on the Central Experimental Farm shows that cows do not dry off more quickly than when milked by hand. Cows have no more objection to being milked by a milking machine than to being milked by hand."

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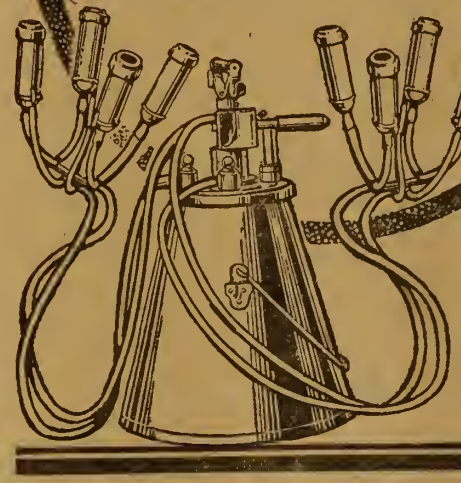

Write us for fuller information on this important subject, and learn also how to do away with drudgery on the farm.

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The Empire Cream Separator Co. of Canada, Limited

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ous breeders and placing the new breeder in posession of a herd of females that present much uniformity of type and quality can hardly be measured in dolars and cents. It is only thus that a beginner may succeed in developing his herd to a standard of high excellence unless he should have the singular good fortune to obtain a young bull that proves to be one of the really great sires of the breed.

The Test of Efficiency

The breeder must make a constant study of the essential merits of breeding animals and familiarize himself with the general type and minor characteristics of his animals in order to render them suitable for the persons into whose ownership they ultimately come to perform their service. The cow that shows a profit at the end of the year gives more real satisfaction than a phenomenal producer who does her work at a loss. The dairymen's ideal of perfection is sure to be the cow that gives him the best returns consequently she must not be a large producer but an economical producer. In judging pure-bred dairy cattle for what they will produce, ancestry must be weighed to an extent of at least fifty per cent. of the whole. To the man who keeps a sire or dam for producing young, a knowledge of pedigree is of as much importance as the make-up of the animal itself. Estimating the value of pedigree will always be a determining factor in breeding pure-bred cattle, and the greatest success will be achieved by those who master and utilize this knowledge and who do not lose sight of the pedigree's best proof, the make-up of the animal itself.

Careful selection of the sires and dams influences the heredity tendency to produce larger milk and butter yields and good breeding stock. A liberal system of feeding and suitable environment develops these inherited tendencies. Heredity is a peculiar force. We can use it to do some things, we can head it off and prevent it doing other things we do not want it to do, and it frequently does things that no one can acocunt for. Much that appeals to the eye or goes to make big records is caused by what goes into the mouth. Good breeders who have made a success have been generous feeders. Feed is not all, for there are many cows that can not return a profit under and system of feeding. It is the breeder's duty to weed out all of the unprofitable cows by the process of elimination. Good breeding must be reinforced by generous feeding to bring out the best that is in animals.—W. M. Kelly.

THE SALE RING LIKE THE SHOW RING MUST HAVE THE ANIMAL IN FIT SHAPE

good bull is more than half the herd and a poor bull is the whole herd." This remark came from Prof. E. S. Archibald, Ottawa Valley District Holstein Breeders' Club, when asked to express his opinion on the subject of the "foundation cow." He made the piquant remark that the cow that was brought into the sale ring, was the cow from which the young buyer had to start his herd. He deprecitaed the practice of entering at consignment sales the valueless cow. "Bring your good cows to the sale and it will uphold the breed character. To bring such trash to a sale makes short life and quick death to the sale organization." He advised the Club to take precautions to keep non-type and non-record cows out of the sale ring. The animal or herd representative that tops the sale is the animal fitted for sale. The best sales of the past years were those that had their consignments guaranteed against tuberculosis and abortion for 60 days. The sensational Holstein or Shorthorn sales of the past, that drew crowds of buyers from all over the American continent, was simply due to the quality of the stock advertised and the guarantee each animal caried with it. "It is one of the duties of the Club," he said, "to take initial steps to organize the character of the sales and make it one of the fundamental principles in the conduct of their business."

In answer to some questions asked him in regard to the principles of breeding from cows that did not conform to every detail of confirmation of character, he said that "no one can take chances on a weak and poorly shaped udder even though the cow had good conformation. The udder was the place where the milk was manufactured. A shallow cow with a good udder was a better choice, but the shallow cow was apt to be a flusher." He advised to go after the cow that neither of these faults; they will not make good foundation cows. "Breed the durable farmer's cow; no other way will lead to tth euplifting of the breed or its utility. The pure bred cow must be the commercial cow and al else should be discounted with the breeder of pure bred Holsteins."

THE DAIRY BARN'S FOUR MAIN CORNER STONES

In the construction of the dairy barn there are four points that are of very decided importance. These are real fundamentals from the practical standpoint. In the first place darinage is imperative. Have the barn so located that the natural drainage will keep the yards and surroundings free from the slop and filth that are inevitable where water is allowed to accumulate from the eaves with every rain. If there is no natural location that provides this perfect drainage, make a location by grading.

The second point from the natural standpoint is a location that provides sunshine in every quarter of the stable. This may seem impossible from the absolute standpoint, but is is possible to provide such an abundance of windows and to have the barn so situated that there will be sunshine in some part of the stable during both afternoon and morning.

A third point is the method of construction. Each man may have his own pet ideas as to the form of the barn or the building material to be used or the particular shape and arrangement, but with all of this one must remember that the stable is often a source of bacteria contamination and ti may propogate disease to a very rapid extent, if it is so finished that filthy slovenly conditions prevail where the cattle stand. Keep the barn in such a way that it can be easily cleaned, that it will be easy to produce clean milk therin and that it will be free from all nests and places that harbor disease germs.

Finally, the dairy barn sould be provided with thorough systems of ventilation. Fresh air is the cow's native right just as it is the native right of the human being. It is unnecessary to have your stable so foul that wehn you open the door in the morning the air is almost overcoming simply because it has been closed for the night. A stable may be just as warm when flooded with pure air as it is when sealed up heremetically. As a matter of fact it is warmer and far more comfortable for there is nothing to be gained by forcing a cow to breathe the same air over and over again. It becomes overburdened with impurities and is a regular hotbed of disease.

A TRANSFORMATION

"Mr. A. C. in 1915 sold some poor cows, again in 1916 he sold his five poorest; he has fed better, has put in a silo, and has a goo dsire. From being one of the poorest dairymen in the section, he will now rank among the best." So writes a keen observer of dairy progress in Quebec.

From a yield of 3,021 lbs. milk in 1915, the above dairyman increased the production of ten cows to 6,246 lbs. milk and 236 lbs. fat in 1917.

How did h eknow which cows to keep, which cows to sell? The answer is very simple. He kept dairy records, weighing the milk of each cow night and morning every tenth day, right through the lactation period, so that there was no mistake about it. He also found that it pays to feed well and grade up.

Consider that milk yield a moment: from three thousand up to over six thousand pounds, doubled in three years; what a transformation! That's real encouragement, better returns for labor, more cash, more home comforts, more real use to humanity.

Yes, of course his experience can be duplicated. Just write to the Dairy Commissioner, Ottawa, for milk record forms, they are free, and get started weighin right away, as soon as the first cow freshens.—C.F.W.

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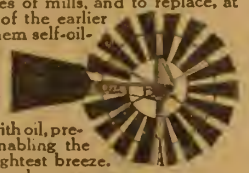

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THE HORSE

REARING HEAVY COLTS FROM MARES

There is perhaps no side line in general farming that under suitable conditions gives better monetary returns for the labor involved than the rearing of draught colts. Among the necessary conditions are, first, roomy mares of good quality with some draught breeding and weighing at least 1300 pounds; second, a chance for good pasturage, well fenced. The barbed wire fence is not a good one as risk of damage to colts is too great.

The mares above described will do the work of the farm and raise a colt yearly, if desired, with but little lost time at average farm work.

The type of sire available has a good deal to do with the profit to be realized from the colt. He, of course, should be purebred if consistently good results are to be expected. Conformation and quality are of more importance than his weight, though the larger he is if his quality is right the more valuable he should be. Whether he be Clydesdale, Percheron, Suffolk Punch, Shore or Belgian, his feet and bone must be good, his joints well formed and smooth and evidence of constitution and draught strength shown by his keneral conformation. The choice of breed is largely a matter of personal preference, but if all the farmers in a county or agood sized portion of it could only have the same preference and breed along the same lines, they could reap much more profit from their colts than where all the diereafft breeds are introduced. Better stallions could be obtained and much better markets got for the colts.

When a really good stallion can be obtained it will be more profitable to pay $20 for a service fee than $10. No stallion owner cann afford to put from $2 500 to $4.000 into a horse for the $10 fee. The best stallions of any breed cost within the above range and sometimes very much higher..

The time to breed is whenever it can be done. A good colt may be raised if dropped any month in the year. If it were possible to breed so as to have the colts dropped when the work was least pressing that would be the most profitable time. A comfortable box stall is needed for each mare and colt. The mare may work moderately up to time of foaling and after a week's rest after foaling can go into the team again without injury. She should not be overheated and the colt should be allowed an opportunity to suckle at least three times between 7 a. m. and 6 p. m. At ordinary farm work the loss of time for a mare in foaling and caring for the colt should not exceed $10 in cost.

From data obtained at the Fredericton Experimental Station, such a colt at three years of age, well broken and ready for business represents a total expenditure of—Service fee, say $15. Loss of time of mare $10. Feed for two years $61.51. Feed for third year $80.60. Blacksmith bill $10. A total of $177.11. Against this there is a credit for the work of the colt during the third year which at the Experimental Station was 100 days at 70c per day, leaving the net cost of the colt weighing 1390 pounds at three years old, $107.11.

At present these colts will sell at from $160 to $200 each.

TRAIN THE COLTS YOUNG

One farmer was visiting another; his team stood hitched. As he was about to start for home the neighbor said he would like to have some help in trimming the feet of a three-year-old filly whose hoofs had been let alone so far. This animal was barely halterwise and had never had her feet picked up before. So there followed a rough-and-tumble fight. The mare was "roped" and the rope burned her leg. She fought and finally backed into the hitched team, kicking them so that they backed into a wire fence. A general mix-up followed and for a while it looked as though both men and all three horses would be tied in a hard knot with barbed wire.

It was a dangerous undertaking, and the next hoof-trimming will not be easy either. But if the filly had been gentled while she was still in her baby days there would have been no trouble. We have two mare colts, one of the spring of 19'3, one born last spring. Both of them are halter-broken and the older one knows words of command, so that she will step up or over in the stall when spoken to. The old-colt is high-strung like her mother, but my daughter put the halter on first and coaxed her until she would lead. There was no fight, no danger, though the colt seemed to shed some tears. I mean it; her eyes really filled and watered the first time. The younger colt took it very quietly, for she is not so nervous, though the two are full-sisters. They have both had their feet trimmed a number of times; our soil sandy soil does not wear the hoofs much and frequent trimming is necessary. They may be curried all over and the feet picked up at an ytime. With tame colts like these therr is no "breaking" such the cowboys used to risk their lives in, sometimes spoiling a horse for life.

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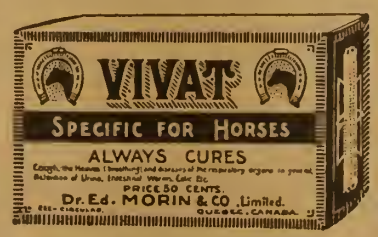

A sovereign remedy in powder form which cures, Coughs, Heaves, Colic, etc. It strengthens the work horse as well as the race horse, and enables them to do more and better work. It has been successfully prescribed by many veterinarians notably by Dr. J. D. Duchene, in many critical cases, where results have proved remarkable.

A 50c box will be sufficient for six days' treatment.

DR. ED. MORIN & CO., LIMITED, - - Quebec, Canada

The older of our fillies will go into harness and carry a saddle this spring. She would have been taught now if the winter had not been so severe as to make outdoor work unpleasant.

One of my neighbors has a two-year-old mare that a ten-year-old boy rides and drives anywhere. She has always been handed by the children and does not know what is is to be afraid. Nothing ever hurt her yet, so she takes whatever comes as a matter of course. This family style of horse breaking is not so spectacular as that of the old range days, but it is cheaper, requiring no expensive saddle, no lariat, no whoops and yells, no quirt. It is more real fun, too, and makes a horse that will respond to 'whoa" when accidents happen. If the colts could choose there is no doubt about which kind they would favor.

Our younger colt was a little wild for a time owing to her mother's over-anxiety for her welfare. The mother's foolishness when a strange horse was brought into the yard resulted in a serious accident. She crowded her baby through a fence and it was cut badly. We brought the two into the barn and the men wanted to throw the colt so that we could stop the blood, I thought that would give her too much of a shock, as she was less than three months old, so I just followed her about quietly, putting on flour to stop the blood flow and finally getting her into a corner where is could throw a knotted bandage around the cut leg. Then she submitted quietly, as we let her stand close to her mother. The next day and while the leg was healing there was no trouble at all in handling her. That was all there was to her gentling and when her halter, a home-made one, made of an old pair of suspenders, was put on she took it as a matter of course, and followed wherever she was led.—Minnie B. Davis.

Horsemen Attention !

Dr. J. Woodbury's Horse Liniment and Dr. J. Woodbury's Condition Powders will save and preserve the life of your horses. Their use will cure and prevent the disease common to horses, such as Cough, Colds, Distemper, Spavins, Pinkeye, Splints, Curbs, Enlargements, Cracked Hoof, Kidney Trouble, Fevers, Cuts, Sores and will remove bunches of all kinds.

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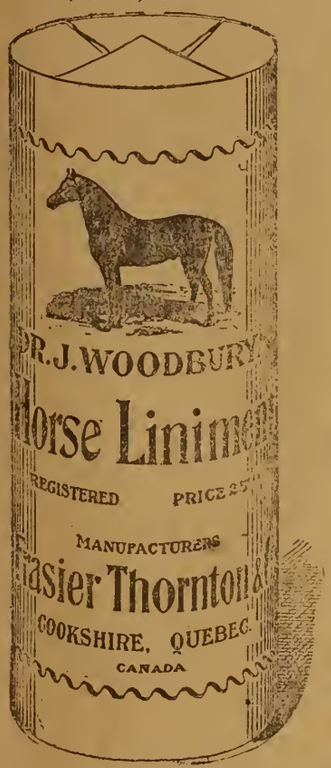

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Use this preparation thoroughly for all and every disease of the horse for which it is recommended. Criticise it closely. Carefully watch, mark and notice, its effects, and, honestly judging it on its merits, you will be compelled to endorse it.

HOW WORMS AFFECT COLTS

As winter advances the damage from worms becomes evident in colts and horses. It is not because they have worms only at that time, but because the progressive infestation from tainted pastures or drinking water during the summer becomes more marked as the grazing season advances. Then as failing pastures and the change to the commonly poor quality of dry feeds causes a decline in the animal's thriftiness, the worms become more injurious. The extent of the injury from wrims is seldonm realized. If horsemen understood about it and were on their guard they would be saved much loss in values and be spared from the occasional actual deaths of valuable animals.

Most of the worms which affect horses are taken in by them with infested water or feed. Low, poorly drained, marshy or persistently damp pastures are very likely to harbor various sorts of worms to which horses are subject. When horses drink water from streams they sould be watched very closely for worms. There are some streams which have acquired a local notoriety because of the number of horses that die along their courses. Post mortems reveal worms.

Injurious results from worms are most common in colts and old horses, while those in the prime of life are able to endure their debilitating effects. The most commonly noted symptoms are white stains around the anus, an unexpected thriftiness, rough hair, loss of flesh, indigestion, anemia, tottering gait and sometimes colic. The absence of worms from the excrement is not an indication that the animal is free from them. Some kinds do ont appear and some others seldom do.

Various vermifuges may be used to clean out infested animals, depending upon the kind of worms predominating. Directiins for treating are frequently given in our veterinary columns. An almost miraculous change to a thrifty appearance and rapid gain in flesh frequently follow the eradication of these parasites. Prevention is beter. If horses have large pastures with good surface drainage and well water to drink they are not likely to become seriously infested with worms. If they must be confined to closely grazed small pastures an annual change to fresh ground is helpful. It is a notorious fact that horses do not thrive when crowded in small pastures even though the grazing is good. Doubtless worms are an important factor in such cases. .

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CURING THE COLT'S CRACKED HOOFS

Due to lack of attention the fore feet of our draft yearling split badly when the colts were turned on pasture last spring. They carcked up the sides almost to the hoofheads and were spread badly. We hesitated about paring and rasping them, as we had never done this before and our father always said that the blacksmith would soon put the feet in shape when the colt was old enough to work and needed shoeing. But in this case we decided that something must be done, as the colt's feet were getting worse and he was beginning to show lameness.

Catching the yearling one morning, we quickly levelled the sole of the foot, using a heavy jock-knife, a blacksmith's knife and a rasp. The outside edge of the hoow was cut sort so that the pressure of the foot on the ground would not spread the hoofs. The outside quarter of each fore hoof was longer than the rest. It was spreading out and seemed to b ebreaking away from the wall of the foot. This was shortened so as to bear no pressure until the crack had time to grow out. About three weeks later the feet were rasped and again levelled. The cracks began to grow out at once and in three months the feet were sound and well formed.

This was the worst looking set of feet I ever saw on any colt. Two treatments with the knife and rasp put them in fine shape. So we have entirely abolishe dthe old idea that "the colt's feet should not be rasped until he is put to work." We are examining the feet of all our colts every few weeks. A few minutes with a sarp knife or rasp keeps them level and no cracks will ever be seen in them.—J. W. Henceroth.

WATERING HORSES

The stomach of a horse is extremely small, and therefore he should be watered at least three or four times a day, and if possible, should receive hay and grain three times a day. The less work he does the more important it is to give him hay often, because a hungry, idle horse is apt to take up some bad habit, such as biting, kicking cribbing or weaving. If he gnaws his manger or stall he is either hungry or wants salt. Salting is often neglected by many horse owners. It is a good plan to keep a lump of rock salt where the animals can get it when they want it.

PALMER'S
Summer Packs
for the
The "Soldiers of the Soil" recruits need Palmer's Summer Packs, or plough Shoes as they are often called, to keep their feet in good condition while doing hard farm work which their feet are not accustomed to.
Even farmers whose feet are hardened to farm labor find Palmer's Summer Packs very restful to tired, aching, burning feet. They are light in weight, roomy, pliable, comfortable, durable and waterproof.
Get a pair from your dealer. Look for the "Moose Head Brand"—stamped on every pair—a warranty of satisfaction.
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POULTRY.

RAISING POULTRY FEED

In these days of high prices and scarcity, it is necessary that the farmer, instead of selling or killing off his poultry as no longer profitable to keep, keep his poultry and raise his own feed, or at least a good part of it. The poultr ymust be kept or the nation and the world will soon be without eggs, one of the most important food products of the farm, to say nothing about the meat of the poultry. This latter we can, if necessary, get along without, but most people would not care to if it can be avoided. Nor is it necessary, for it need not cost more to raise poultry and eggs than it does to provide other foods produced on the farms.

Farmers raise too little rgain—the most of them. If the right grains are selected, it is not difficult or specially expensive to raise good crops. Dent corn can be raised profitably on many farms, but not on all, and this should be planted and produced only where it can be done with satisfactory results. Oats may be raised almost anywhere if the proper varieties are selected and right methods used. In some parts of Maine, barley is easily and satisfactorily produced, and buckwheat nearly always proves a profitable crop under proper management. All these grains are suitable for poultry, and a satisfactory scratch food may be produced without difficulty by a proper combination of the varieties of grain that may be profitably raised in this climate.

A good crop of mangel beets may be kept in a moderately cold cellar and fed to and enjoyed by the poultry all through the winter. There should, of course, be a good supply of fresh Swiss chard and similar green food through the summer, and in the winter there should be plenty of small and unsalable cabbages, so that the hens may have all they want all through the cold winter. It is also best to lay aside some of the most sound of the oats that have been threshed in the fall to sprout during the winter. This is some work, but no great task, and the labor will be well paid for in increased egg production at the time when eggs are highest and most profitable.

About everything that the farmer is unable to raise is the grit and shell that are so essential to the welfare of the birds, and these have not suffered seriously in price through war conditions, for this sort of food does not require cultivation, and all the labor required is that used in crushing, shipping and packing. Water, too, is free for the effort of preparing and keeping the dishes clean and the labor of transporting to the desired pens. It should be remembered that the greater part of the eggs is nothing but water, and the owner or caretaker should see to it that the hens never lack for this very essential part of their living ration.

High prices of grain do not offer a great inducement to raise many chickens this spring, and if reports are true, comparatively few will be raised. Perhaps it is wise to cut down the number somewhat, but a wholesale reduction where it is possible to raise them will prove a mistake. Chickens will be very high this fall under the best of conditions possible at this time, and this will make them higher still. But the demand, it is said, will not be less than in former years, even at high prices, and those who do have chickens to sell will reap an ample reward. Our advice to all who can do so, would be to raise a few chickens, at least, and if they have the facilities and can get the food for them, to raise a lot. We feel sure that every chicken offered for sale next fall can be sold at a profit, either for food or for breeding and egg production.

The information now being sent out to farmers frequently by the experts at the University of Maine should be a great help to farmers and others who keep poultry, and if their advice is followed with care, failures in the poultry business, even under the adverse conditions which exist today, ought to be, and will be, we believe, very few and far between. Do not neglect the poultry industry, or any other farming industry, especially at this time, when we need every ounce of food that every farm in the country is able to produce. —H. L. Goodwin in Maine Farmer.

VALUE OF MILK IN CHICKS' RATION

The value of milk, whether it be in the form of buttermilk or as the soured product, is inestimable in the baby chick ration.

As a tonic it is unequalled; the medicinal effects of the lactic acid in the milk help to keep the young chicks in the best possible condition and the digestive disorders that cause at least 50 per cent o fthe mortality is thereby eliminated. The white diarrhoea organism which is present in every newly-hatched chick is killed before it gains a foothold and all spreading of that disease is held in check.

Some very successful poultrymen desist from giving the chicks any water for the first three weeks of their lives, but supplant it with milk, since a stronger and quicker growth may be attained when it is used. Invariably, it should procede the first feeding, but not before they are at least forty-eight hours old.

Milk when substituted for beef scrap reduces the expense, while the danger in feeding is cut to a minimum. Alternating sweet and sour milk will prove disastrous, as it has a tendency to upset the digestive system. Experiments have shown that the chick's appetite is greatly increased when some form of milk is fed and no ill results have followed. R. K. K.

WHEAT SCREENINGS

Wheat screenings furnish a very economical grain ration for growing chicks or laying hens, and can be purchased in wheat-growing localities at a very reasonable price. With plenty of grain coming to our local mill we are able to buy a fair grade of screenings containing over 60% of broken and shrunken kernels with perhaps 10% of the balance edible seeds at $1.25 per 100 pounds. Screenings at this price are a very good buy, and we have laid in an ample supply for the coming season. They will replace 50% of the mixed ground feed for chicks over four weeks of age and at less than one-half its cost.

We feed the screenings in the brooder litter to encourage exercise or they can be thrown upon the ground out of doors or fed in troughs or hoppers if desired. A wholesome chick feed can be prepared at home by mixing together 100 pounds of screened cracked corn, 200 pounds of wheat screenings and 50 pounds of hulled oats or steel-cut oatmeal. The dirt and chaff in the screenings do no harm, for chicks one month old and over will pick out only the edible portion and leave the balance.

The edible portion of wheat screenings can be easily tested by putting a certain quantity, say two pounds, in a deep box before growing chicks or adult fowls. After they have picked out all they want weigh the remainder and the per cent of wholesome feed can be easily computed.—Maurice H. Decker.

HENHOUSE HINTS

Your poultry houses should be well ventilated in summer. Every glass window, cloth curtain, and board door should be left open night and day or removed until cold weather. It will require only a few minutes to do this and it will contribute much toward the comfort and best welfare of your hens. During warm weather it does not matter which side of the house is open, it would be better if all sides were out. There is no danger from drafts during August and September. Growing chicks will grow best when they can roost where there are clean perches and only a roof over their heads.

With this simple arrangement there will be less danger from crowding and mites. These mites or spider lice multiply very rapidly when the roosts are neglected. You will find them under the perches and in the cracks and crevices of the adjoining wood work. They crawl out of their hiding places at night and suck their fill of blood from the birds on the roosts. You can often detect them by a very disagreeable odor which they throw off.

In order to get rid of them the house must be opened up to the air, brushed and cleaned out thoroughly from ceiling to floor and then sprayed with a solution of creosote oil and water and then with whitewash so as to know every part of the house has been covered. If a dirt floor, 5 or 6 inches of the top must be removed to make a complete job of housecleaning. Those who keep poultry and neglect to keep them clean and comfortable cannot expect them to be profitable.

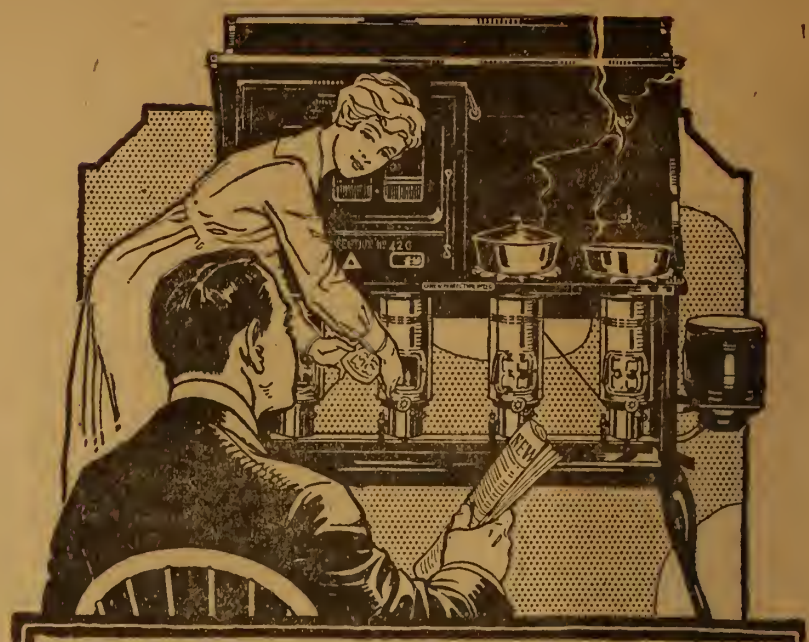
MITES IN HENHOUSE

Because red mites secure their food from the hen's body at night and hide on the roosts and in cracks in the daytime, they are particularly hard to destroy and must be constantly fought to be eliminated. If the mites are numerous an examination of the hens at night may reveal fowls to be fairly alive with them, while in the daytime they will be almost free from them. The bright red color of the mites is due to the blood which they have sucked from the body of the hen.

In the daytime practically all the mites will be hiding on the perches and cracks about the poultry house; the application of boiling water will be effective at this time. After the water is applied spray the perches and dropping platform with creolin or zenoleum. If crude oil is available the perches should be painted with this material frequently. The nests should also receive attention.

CARE OF YOUNG TURKEYS

Turkeys are, as a general thing, very hard to raise, but this is due mostly to carelessness and ignorance of their nature. Small turkeys and their mother should be given a large well-ventilated



COOKING IN COMFORT, AT LAST!

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Husbands and sons—if you had to do the cooking, wouldn't you like to do it in the most economical, most efficient, simplest way possible? Save your wife or mother further fuel worries. Buy her a New Perfection Oil Cook Stove—It will mean better cooking, a cleaner, cooler kitchen and less work for her—and for you, economy, comfort and no waiting for meals.

Select the style now that suits the individual need of your home—one, two, three and four burner sizes. Be sure it's the stove with the Long Blue Chimney—and that it has the Cabinet and the New Perfection Oven. They make the stove complete for year-round cooking service.

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coop on dry, well-drained ground.

Poults should not be fed until they are twenty-four hours old. Their feed should consist principally of dry grain, chick feed (that is clean and bright) milk (sour o rsweet), grit, plenty of green grass and some vegetables (such as onion tops). They should have fresh water every day.

Turkeys must have absolute cleanliness, fresh green grass to run on and must be kept free from lice by dusting insect powder in teh plumage of the hen and applying vaseline on the heads of the poults. They must have free range so they ca nhunt for insects for they have a wild, roaming nature.

DISCOUNTS EARLY MOLTING

Early molting of laying hens has been the recent topic of investigation by the agrichlthral department of New South Wales. The result in general agrees with recent American opinion that the various devices for forcing hens into early molting are not followed with satisfactory results. In fact, the reverse is often the case. Early molting hens are inclined to be poor layers for the most part, and some are inclined to molt twice, the second time at the first touch of winter. "Such get-rich-quick notions," comments the erport, "are generally heavily discounted by nature, and the beginner should shun all such, and begin along the lines of common sense and reasonable expectations."—George B. Fiske.

DON'T BOARD ROOSTERS

A great many farmers fail to realize that when they keep a lot of roosters around the place, they are supporting a number of non-productive boarders. Hens lay better without the roosters, and the eggs, being infertile, are very more easily kept and will last for weeks even in warm weather, where fertile eggs quiikly spoil. After April 20th, hens can again be put on the market for sale, and every good farmer is urged to sell his old hens and save the young phllets for laying fall eggs. Ship the cockerels to market promptly.

DUCKS AND DANDELIONS

Five ducks were premitted to have free access to a lawn 50 ft. by 150 ft. during the summer. At the end of the season the dandelions had been entirely suppressed without injury to the lawn, and did not come in again until the third season following.

The ducks were said to eat off not only the tops, but to grub out the roots to some extent. More ducks and fewer dogs should constitute a good food conservation motto at this time.

MAKE EVERY CHICKEN COUNT.

The aim this year should be to make everything count. Make every hen lay her best, make every chick mature early enough, and thereby make every pound of feed give the maximum returns.

Hatch Early.—Make every effort to get your chicks out this Spring before the first of June. As a rule the heavier breeds hatched later than that date are not satisfactory. At least 90% of the pullets in Canada were not laying during November and December of the past Winter, because they were hatched too late.

A Little Sand or Grit First.—When the chicks are removed to their brooding quarters there should be some coarse sand or fine chick grit scattered where they can have free access to it. They should be left until they show positive signs of hunger, which would be between the second and third days after hatching. They may then be given some bread crumbs that have been very slightly moistened with milk; this may be scattered on clean sand or chick rit. If being brooded by a hen, she will see that no food is allowed to lie around, but if in a brooder, that part of the food that the chicks do not pick up in a few minutes should be removed, as nothing in feeding causes so much trouble as leaving food of that nature around until it is sour.

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Feed for the First Ten or Twelve Days.—The following ration of five feeds given about two hours and a half apart, and continued from the time the chicks are two to three days out of the shell until ten or twelve days of age, may be altered or adapted to suit conditions:—

First feed—Dry crumbs slightly moistened with milk.

Second feed—Finely cracked mixed grains or commercial chick feed.

Third feed—Rolled oats.

Fourth feed—Dry bread crumbs moistened with milk.

Fifth feed—Finely cracked mixed grains.

In addition to the above, give the chicks a little green food, such as grass, lettuce, sprouted oats, etc. Do not have the moistened bread sloppy, but in a crumbly state, and during this period let the chicks on to fresh soil or grass every day if possible.

BUY YOUR WINTER EGGS IN MAY AND JUNE

Good Advice From the Commission of Conservation, Canada.

Eggs laid in April, May and early June keep better than those laid later in the season. If properly treated, they will keep in perfect condition from eight to twelve months. If the egs are to be boiled, the larger end should be pierced with a needle point before putting them in the boiling water.

The eggs, to begin with, must be fresh and clean, not washed clean, but laid clean. If the shell of an egg is not clean, use it at once. If there is a spot of soil on the shell the water glass does not come in contact with the shell and the egg will decay.

A quart of water glass in a five-gallon crock or agate-ware container will suffice for 15 dozen eggs. Clean the crock thoroughly, scald till hot, wipe dry and stand in the sun, if convenient.

Boil 9 quarts of water, allow it to cool thoroughly, then add the water glass and stir well in the crock. Stand the crock in a cool, dry place, and do not move unnecessarily after the eggs are packed. Put the eggs loosely, but carefully, in the solution, leaving a depth of two inches or more over the top layer of eggs. Tie heavy oiled paper over the crock to prevent evaporation. For more than 15 dozen eggs two crocks are preferable to one larger one. After using the water glass once it must be thrown away.

If water glass is too expensive or is unobtainable, add 3 pounds of unslacked lime to 5 gallons of water. After the lime has dissolved and settled, carefully dip off the clear water and pour over the eggs as with water-glass.

Do not pour the water glass or lime water over the eggs till it has thoroughly cooled.

DON'T WASH EGGS

Over 5,000,000 dozen egs are spoiled each year by washing. It doesn't hurt an egg to wash it if it is to be consumed in a short time, but if this egg is put in cold storage, the chances are about one in five that it will spoil. Water removes from the shell a gelatinous covering which helps to keep air and germs out of the inside of the egg. If this covering is removed by water, germs and mold find ready access to the contents and spoil the egg. Only from 4% to 8% of dirty eggs spoil in storage, but from 17% to 22% of washed eggs will spoil.

It is impossible to prevent a certain amount of dirty eggs being gathered, but the quantity can be greatly reduced by using a liberal number of nests, which are kept well sheltered, and an abundance of clean nesting material. Eggs with dirty shells should be used in the home whenever possible. They may frequently be cleaned with a damp rag, but should not be immersed in water.

Shut up or sell the males as soon as the breeding season is over. Their presence does not increase egg production, but lowers it, because 2% to 3% of the females are injured by them.

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90% of the Friction Pulleys sold with Gas Engines are not manufactured by the makers of the engine. When you buy an Engine equipped with Friction Pulley you have your choice of Engine, but someone else choice of Pulley. When buying make certain of satisfaction—choose the pulley yourself—specify, or order direct, Bernard's Double Friction Pulley.

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The heavy, hard steel top and bottom wires with intermediate laterals will hold a carelessly backed wagon or unruly animal and immediately spring back into shape.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editors, Misses Saunders and Winter, of Fredericton, N. B., solicite your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's organizations.

GET THEE BEHIND ME, SATAN!

(By Alice Garland Steele)

Miss Cornelia, in her youth, had willingly renounced "the world, the flesh, and the devil," but even Miss Cornelia had stopped at the last word—it was too awful to be spoken! She had, at the advise of her Sunday School teacher, substituted "Evil One," and as the Evil One was never expected to figure in Miss Cornelia's after life, she very promptly and properly forgot him.

Had there been any doubt of her safety, she had left it behinid her forever when at sixty-five she entered the Old People's Home. This truly was a household of faith, where sainthood was as necessary an adjunct as the three towels, knife, fork anad spoon which one handed over, the very first day to the matron. And yet, strange as it may seem, it was here that Miss Cornelia, turning an unexpected corner, for the first time in her life met the Evil One and fell from grace!

Miss Cornelia had serious blue eyes and lips curved downwards. Her hair, with a stray ringlet or two was demurely parted; her soft, fine skin looked as if some beloved hand forever smoothed out the wrinkles—in other words, Miss Cornelia, who should have been old, looked eternally young.

She was a picture-book old lady. She was pointed out to visitors on Sunday as an example of what the "Home" could do—on voluntary contributions. She was never known to backbite or gossip or find fault with the matron, and she never asked for two helpings of pudding or never mentioned that there were lumps in her bed. To be brief, she conveyed the impression the managers desired—that she was being carried to heaven on "flowery beds of ease."

But Miss Cornelia had to go and meet the Evil One.

It happened on the day of the managers' reception, when the upper halls were closed and the floor below was given over to the matron and the caterer and the florist, and no old lady was allowed down on any pretext whatever. It was like a grown folks' party with the children all sent off to bed! Nevertheless, for days the old ladies had prayed for fair weather, and cleaned out all their bureau drawers on the chance that a stray invited guest would make a five-minutes call, or ask to see the inmates. It is something to be in the same house with a party!

Miss Cornelia, sitting by the window in her neat little room, let her mild eyes wander to the world outside and tried to feel happy. Nancy Huggins was in the rocker with her knitting, and the Widow Brown and Mrs. Parker were on Miss Cornelia's haircloth trunk. The Widow Brown fanned herself with an air of repressed excitement.

"Land of Goshen," she said, "they are fixing up things a lot more than last year! They've got smilax on all the chandiliers and green stuff draping the pictures of the founders and they've ordered the ice cream in figgers."

"And I saw," added Mrs. Parked, "the matron fixing a white ruche in her new black silk. Well, it's consoling to think some folks wouldn't be good-looking with any amount of trimming! I do think she's about the humbliest married person I saw in my life."

Nancy Huggins picked up a dropped stitch. "I don't know as it's wise, Mis' Parker, to say them things. These walls are terrible thin. Besides, a sensible man picks out a humbly woman sometimes, knowing her good points ain't always her nose and teeth."

"Well," sighed the Widow Brown, "I do think those managers are mean as grasshoppers—having their good time all to themselves. I guess you and I, Mis' Parker, could enjoy a lace-paper napkin and a plate of ice cream as well as anybody and I guess we've been to parties enough to know our manners. I hain't always been shut up like this. Why, to my step-datter's wedding we had as much as seven kinds of sandwiches and when I was all rigged out I was 'most as dressy as the bride!" The widow was apt to dwell on the glories of her wornout gowns.

Miss Cornelia looked up, a wistful appeal in her eyes. "What'd you wear?"

"Plum-colored satin. Yes, ma'am, with the front breadth laid in tucks by hand—it was dreadful becomin'."

"Tucks," said Mrs. Parker, "is wasteful, but elegant."

"Elegant? Well, that's what it was. I've got it in the bottom of my box now, but I don't suppose, till I'm dead and gone, I'll have a chance to wear it. I did think of willing it to somebody, but I guess it's a wonman's dooty to look well, even on the Day of Judgment and Samuel always did fancy that plum satin. I rather think he'd live me to wait in it for the Last Trump!"

Miss Cornelia was breathing quickly. Two little red spots had come into her cheeks. "Is it handy?" she said, "I'd love to see that tucked breadth."

The widow got up slowly. "Well," she said, "I'll get it, Cornelia, I'd kind of like you to see it myself."

For the next half hour Miss Cornelia's room was given over to fashion. The plum satin was duly admired and laid carefully full-length on the bed. Mrs. Parker, not to be outdone, brought in a "real lace jabot" that had always been in her husband's family and even Nancy Huggins, who despised the treasures of earth and wore plain linen collars, remembered a carnelian set her mother had worn, and borught it in, reposing in its sabby little velvet case.

Miss Cornelia, stroking a fold of the plum satin, felt her lips quivering a little. "I've never," she said in a faint voice, "been to a party in my life!"

"Good land," cried Mrs. Parker, you poor thing!"

Nancy Huggins resumed her knitting with a humorous twist to her mouth. "A good time," she said evenly, "usually goes to a man's head, and there are some women who can't stand it any better, Cornelia."

Miss Cornelia's cheeks flamed. "I know it's wicked," she said, "but I'd just love to dress up and be stylish for once. I've had to wear plain things all my life, and I've never been to anything livlier than a Sunday School picnic—and in heaven I suppose I'll never have a chance!"

"It's a good thing, Cornelia," said Nancy Huggins decidedly. "Imagine Mrs. Martin Luther goin' to a pink tea, and John Calvin trippin' down the aisle in a swaller-tail coat! I tell you what, Cornelia, the vanities of this world are always deluding us and carryin' us out of our proper circuit, but in heaven the Lord himself looks out for us—we won't be tempted no longer."

Miss Cornelia's voice trembled. "Were you ever tempted, Mis' Huggins?"

Nancy counted four stitches in her knitting. "No, Cornelia—I was born a archangel." And I almost think Miss Cornelia believed it!

Just at that moment the door opened and the second chambermaid thrust her head in. "The matron's been took sick," she announced. "Ain't that awful—and the reception coming off in less than an hour! She's got cramps in her stummick and her eyes is closed up with headache and she wants Mis' Huggins to step down at once and make her a cup of sassafras tea—and you, Mis' Brown, are to help me finish up the dusting."

Nancy Huggins carefully folded away her knitting with a backward nod. "I haven't time, Cornelia, to put away those bangles—just keep an eye to 'em, will you? And Mis' Parker, you better come along with me—she'll need some one to rub her, maybe."

And somehow in a minute they had all fluttered out, and Miss Cornelia, breathless, was alone. Suddenly she was aware that Mrs. Parker had come hurriedly back.

"I was forgetting," she said "I'd left my lace jabot—and I guess I'll just take the widow's dress and lay it on her bed."

"Oh, please don't," said Miss Cornelia. "I mean—" she faltered, "that I feel sort of responsible—andI—I'd like to copy off some of those lace stitches—I thought they'd look so beautiful in my cotton crochet."

Mrs. Parker nodded. "Well, I don't know as I'd trust anybody else with it, Cornelia, but you keep it awhile—I'll come in later and tell you if the matron is better. If they send us up any ice cream I'll take mine with you."

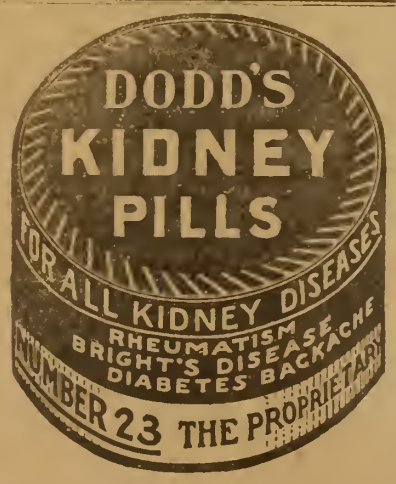
"They won't," said Miss Cornelia, "besides, I'm going to lie down a bit. But you can try my door, Mis' Parker, and if it ain't locked, why just walk right in."

She watched Mrs. Parker go stiffly down the hall and descend the three little steps to the matron's quarters. Then she closed her door and turned the key. She went to the mirror and held the plum satin against her cheek.

"It's really becoming," whispered Miss Cornelia—"and I never was to a party in my life!" And then sudenly she stood very still. There was nobody in the room, but Miss Cornelia dropped the satin dress in a little heap at her feet, and spoke aloud—

"Get thee behind me, Satan."

Alas, Miss Cornelia had met the Evil One. He had been there, strange to say, all the time, peering from behind the folds of the plum-colored dress, luring her with the glitter of Nancy Huggin's gold!



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Mr. Roy A. Bovay, Trenton, Ont., writes:—"Two years ago I was very much troubled with boils and pimples on my face and body. A friend advised me to take Burdock Blood Bitters. I got three bottles, and before I had finished the third one, my boils and pimples had all disappeared, and my face and body were as clear and as smooth as any baby's could be."

Burdock Blood Bitters has been on the market for over 40 years. You are **not** experimenting when you buy it.

Manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

Now as everybody knows, the Evil One is a foxy old customer and never goes behind anybody of his own accord. You have to grapple with him. You never can get rid of him by reasoning—but Miss Cornelia began to give him her reasons.

'Oh, I know it wouldn't hurt anybody else, and is not what you might call wicked, and I know the matron is sick, but the widow ain't a bit my figure—she's bigger a good deal in the waist. Of course I could tuck it in, but—but I'm not sure—"

You see, the old codger had taken a fancy to this sweet-faced old lady, and he meant to have his way. He showed her just how she could manage!

"But I ought to have a bonnet," murmured Miss Cornelia, "and—and white gloves—" and then she remembered the ones Mis' Peabody had left to her when she died—Miss Cornelia dived into her drawer and got them out. "It does seem," she whispered, "just like Providence—" Miss Cornelia tried her best to ignore the Evil One's hand in it.

Suddenly she slipped off her stuff gown, freshened up her gray curls, and put on the plum satin and the carnelian set, and fastened on the lace jabot, and the bonnet and pinched her cheeks to make them pinker. She was so astonished at the pretty old lady who stared at her from the mirror that she quite lost her head and turned blindly to the door—the hour for the reception had come!

The clock was striking four. Miss Cornelia drew a quick breath, and stepped outisde, locking the door softly behind her. Then she slipped the key into her pocket and tiptoed down the corridor, towards the back stairway. Miss Cornelia knew she must come in, like all the rest of the visitors, by the front door. At the top steps she paused a moment, turning a little faint; her heart was beating in a strange, tumbling way, as if she had given it a shock.

In the hall below she could just see the wooly head of a colored waiter, balancing a tray full of sandwiches. From the matron's quarters, at the other end, she caught faint, sick little moans and Nancy Huggin's quieting voice as she brewed her sassafras tea.

"I'm getting wicked," murmured Miss Cornelia. "I'm glad it's a real bad headache—the kind she has two days at a stretch!"

And then as she descended, she glimpsed the managers, six of them, in Paris gowns, outlined against a room with green biaze doors thrown wide; a room with a soft glimmer of candles and palm decked recesses surrounding a table piled high with glowing roses. Miss Cornelia gasped. Heaven could not be more beautiful! It was worth the shame and fear of being found out, worth everything!

Miss Cornelia slipped out by a back door that opened on a little path which ran through the grounds to the quiet city street. As she walked up to the corner se found a great many stylish people going her way, and a whole row of automobiles. For the sake of the "voluntary contributions" a number of invitations had been sent out and the reckless way in which the "Board" had spent money to make the afternoon one of huge returns was in the nature of a sprat to catch a herring.

As Miss Cornelia passed a great stone house with an iimpressive portier, she stopped an instant, peering at the mysterious dropped curtains. In it lived the wonderful, withered Miss Twitchell—Miss Twitchell, who had come there to live just the April before, who rode out every day in a closed carriage, and hardly let you see her shadow! She was known to keep "family diamonds" in a safe-deposit box, and as far as the world could find out, had never given a dollar to charity in her life!

What sudenly struck Miss Cornelia with a little tremor was the fact that nobody knew Miss Twitchell!

"Nobody has ever seen her close to," murmured Miss Cornelia, and then, as the Evil One whispered a bold suggestion into her ear, she clutched at the iron railing—"My goodness!" she gasped, "I could pertend to be Miss Twitchell myself, and not a soul would ever know the difference! It's—it's Providence!" panted Miss Cornelia—and the Evil One chuckled and waited politely a moment until she got her breath.

Miss Cornelia, with blind inspiration and flushed cheeks, went on. "I am Miss Twitchell," she breathed. "I've been invited to the party, and I'm going—I guess I've got sense enough to remember that and stick to it!" And she added, "It does seem just the Lord's providence that most of the old managers have died off, and the new ones wouldn't be able to tell me from Adam, and—and the matron lying sick on her bed and out of harm's way!" Here the Evil One laughed in his sleeve, but Miss Cornelia could not hear him!

Miss Cornelia, feeling very, very wicked indeed, yet with a joyous thrill at the sheer madness of it, waited at the corner till a very fat person in a gorgeous costume sought admission at the door of the "Home," then she slipped up behind her. The regular doorkeeper, she knew, was not on duty, but she did feel awed as an importanat colored gentleman in a spotless shirtfront demanded her "name please."

Miss Cornelia, very short of breath, pressed forward, and said, "Miss Twitchell, sir" rather indistinctly. "Miss—Twitchell," echoed the colored gentleman clearly, and two of the reception committee forgot their Paris gowns and murmured a sudden little excited welcome. They lifted, as it were, the plum satin between them straight over the threshold, and placed it importantly inside, with a murmured word to a "new manager" in a very straight gown, who ushered Miss Cor-

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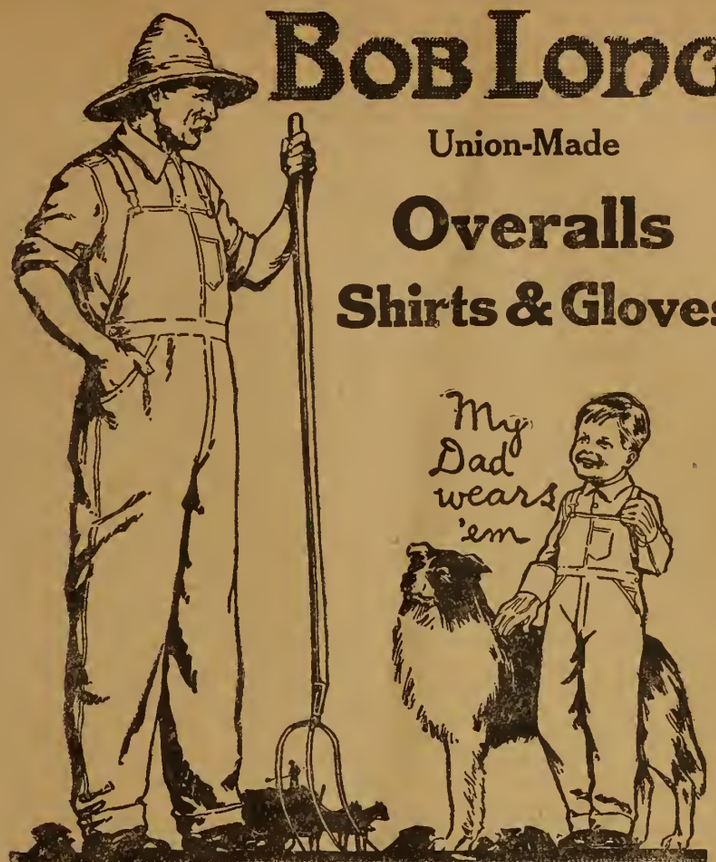

Bob Long says:

"My overalls and shirts are the best made, because—they are roomy and comfortable. I designed them with the idea that you might want to stretch your arms and legs occasionally."

Insist on "Bob Long" brand. Ask your dealer for Big 11—the big grey overalls—the cloth with the test.

R. G. LONG & CO., LIMITED
TORONTO • CANADA 97

I KNOW A WOMAN'S SUFFERINGS

I am a woman.

What I have suffered is a far better guide than any MAN'S experience gained secondhand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write aud tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight aud dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creepiug feeling up the spine, palpitation, hot flashes, weariuess, sallow complexion, with dark circles under the eyes, paiu in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your owu home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

Read My FREE Offer:

To Mothers of Daughters, I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten day~ trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS, Box 309 - - Windsor, Ontario

Daughter, SOUR STOMACH

Mother, FLOATING SPECKS BEFORE EYES

BOTH CURED BY

MILBURN'S LAXA-LIVER PILLS.

They stimulate the sluggish liver, clean the coated tongue, sweeten the breath, clean away all waste and poisonous matter from the system, and prevent as well as cure all sickness arising from a disordered condition of the stomach, liver and bowels.

Mrs. Joseph H. Thericau, Saulnerville, N.S., writes:—"I was troubled with a sour stomach, and took five vials of Milburn's Laxa-Liver Pills, and they cured me.

My mother also used them for floating specks before the eyes. They cured her also after having taken four vials. We both highly recommend them to all sufferers from .liver troubles."

Milburn's Laxa-Liver Pills are 25c. per vial at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

nelia in gracious silence down the palm-decked room.

From a far corner a violin sounded dreamily, and in a dream herself, Miss Cornelia found a soft-gloved hand pressing hers, while a very young voice said: "How perfectly dear of you to come!"

Miss Cornelia looked dumbly upward. My, but it was a sweet face! "Are—are you a manager?" she said.

"Oh, yes, indeed, very much a manager—Teddy says they couldn't run it without me, though I've only been on the Board a month! Teddy, you konw is my husband. They are such dear old things—the inmates, I mean—I do hope I can interest you in the work. I'm not a bit businesslike, they just call me the manager with the soft heart! Have you met our president?"

Still holding Miss Cornelia's hand she led her to a stately person with gold lorgnette, and made a halting, but very earnes presentation.

"Beg pardon?" said the stately person. "I didn't get your name?"

"Miss Twitchell," said Miss Cornelia after a sharp pause—"I live in the house across the way."

It was wonderful the effeet it had on her hearers. They seemed to draw breath and then bend forward in a delighted effusiveness. And as the group enlarged, Miss Cornelia found herself the center of a rapt little circle, that hung on her words.

"Yes," noded Miss Cornelia, growing suddenly bold. "I didn't exactly get an invitation, but I'm interested in old people, because, you see, I am old too."

"No invitation? Why, dear me, I sent you one myself!" The soft-hearted manager was flushing deeply. "You see, they were all a little bit afraid of you, but I knew you had such a lot of—I mean that there are such lovely things one can do if—" she bit her lip and her cheeks grew a lovely crimson, but Miss Cornelia steadiliy smiled.

"Well," said Miss Cornelia, "it must have gone astray—but I know what you mean—I do think the reason I've not given much to charity is because it is charity. Now for instance, in a place like this—the inmates ought to have a carriage ride once in a while—the only kind they ever get is driving to their own funerals!"

The stately person lifted her lorgnette. "Dear me," she said, "how oddly you put it."

The soft-hearted manager broke in quickly. "Oh, do give us some more of your ideas—I—I think you are quite right about the carriage rides—I'm going to send them out in my automobile often, now that I realize they'd like it—we are trying to do what we can for them, and it is beautiful work"

"It is a beautiful work," agreed Miss Cornelia loftily, "but it doesn't go far enough."

"Far eough—" echoed the stately person, "it goes just as far as we can possibly make it. It costs inconceivably."

Miss Cornelia's lips curved; her serious eyes grew more serious; she saw with delight that little group of Paris gowns were hovering about her, drinking in her words—she felt she could go as far as she liked—and they would believe her! She thought up some beautiful brazen lies that would make them all sit up and take notice, and she didn't care two pins that the Evil One was egging her on!

"Of course it costs," said Miss Cornelia solemnly—"but I'll tell you what—if there were certain things, improvements made, I don't know but what I'd promise to give something myself—say five thousand dollars."

The soft-hearted manager gasped. Several of the faces expressed a rigid joy. Here then was the herring coming straight into their nets! They had only to put out their hands and take it!

"But," said Miss Cornelia steadily, "there'd have to be chanages. There'd have to be a eup of tea served to every inmate at five o'clock with buttered toast, regularly, and ice cream for Sunday dinner and not so much baby-food. They haven't all got false teeth and it would do some of them good to chew a little. And there'd have to be a ride, now and then, in the park, and nice, soft mattresses, not hard as corn-shucks—and on Saturday, if they wanted, to go to a moving-picture show, everybody goes to moving-picture hows nowadays, and it seems to me they ought to have a chance at it too." Miss Cornelia paused for breath.

"Can you think," said the stately person, with ominous calm, "of anything more."

"Yes," said Miss Cornelia serenely, "stamps and—pocket-money. If you have a mind to do all this, well—I think I'd add another thousand to the five." Miss Cornelia was going at a mental gallop. Though she didn't realize it, she had much the same sensations, when she staked that final thousand, of a person betting on a race eourse. She had her nerve with her and she didn't care.

The stately person was fanning vigorously. "Pocket-money," she murmured, "why it's outrageous, pocket-money—if she weren't Miss Twitchell—"

A manager in blue suddenly appeared on the outer edge of the circle. She had steel-blue eyes and her smile held a certain hard authority. "Who is that odd person?" she asked trenchantly, but the soft-hearted manager gripped her hand—

"Hush—she's promised us six thousand dollars—it's that wealthy Miss Twitchell from across the street!"

"Miss Twitchell? Why she's nothing of the kind—" her voice came forcefully out of a vast indignation—"I beg your pardon—but would you give me your name?"

Miss Cornelia grew very faint, her eyes were strangely bright, like a robin's, when a cat is by—"My name," she said, "is Twitchell."

There was a sharp pause. The violin, in the corner, was playing "The Rosary"—but to Miss Cornelia it no longer seemed like heaven—she even thought she heard hushed, diabolical laughter. The Evil One seemed to stand, with the manager in blue, on the edge of the crowd!

"Aud you live," said the manager in blue, "in the stone house across the way?" her voice was saturated with courtesy.

"Why, yes when I'm home, but I go most summers to Europe—I live sometimes here and sometimes there—" Miss Cornelia was fluttering now, a tiny bit, and her knees felt as if they might fail her without due warning.

"She seems," murmured the stately person auadibly, "very familiar—ahem—with our institution."

"I once knew—an old lady," said Miss Cornelia bravely, "who stayed here till she died. They all do die—if

"I Believe They Have Cured Me"

WHAT NEWTON P. SMITH SAYS OF DODD'S KIDNEY PILLS.

He Had Previously Tried Doctor's Medicine, Plasters and Liniments for His Sore Back, Without Getting Permanent Results.

Parker's Ridge York Co., N. B., June 8th.—(Special)—After suffering for years from pain in the back, Newton P. Smith, a highly respected citizen of this place, believes that at last he has found a permanent cure through the use of Dodd's Kidney Pills. Asked to make a statement, Mr. Smith said:—

"I suffered for a number of years with pain in my back. At times I was unable to work. After taking doctor's medicine and using plasters and liniments with but temporary results, I decided to try Dodd's Kidney Pills, which I believe have cured me."

All through oYrk County you find people who give credit to Dodd's Kidney Pills for a renewed lease of health. They have been tried for all forms of kidney disease, including rheumatism, dropsy, Bright's disease, lumbago, heart disease and diabetes, as well as the milder forms of kidney trouble. Their papularity all over the country i sa tribute to the splendid results obtained. If you haven't used them, ask your neighbors about them.

The ENTERPRISE BLAZER WARM AIR FURNACE

Will Keep Your Home Full of Pure, Fresh, Warm Air at Least Expense and Trouble

WRITE FOR BOOKLET

THE ENTERPRISE FOUNDRY CO. SACKVILLE, N B.

Ingersoll Radiolite

The 24-hour-a-day watch

WHEN at work on the farm have an accurate watch with you—one that's inexpensive and that stands the jars of hard usage.

And when you wake at night why have the trouble to strike matches to see if the alarm clock has gone off?

Get yourself an Ingersoll Radiolite, and you can know the correct time—all the time—day or night.

Real radium in the substance on the hands and figures of the Ingersoll Radiolite makes them glow like the filament in an electric bulb. The Radiolite glow will last for the life of the watch.

Next time you're at the store or in town take a look at an Ingersoll Radiolite. You don't have to buy it without seeing it first.

It's guaranteed by this company which has sold 50 million watches in 25 years. Same price—same quality, everywhere.

$2.50 Radiolite. The regular Ingersoll with radium luminous figures and hands.

Waterbury Radiolite $5.00. Jeweled, small, stylish, sturdy; the watch the people want.

There's no Radiolite but the Ingersoll Radiolite

ROBERT H. INGERSOLL & BRO.
128 BLEURY ST., MONTREAL

New York Boston Chicago San Francisco.

GENUINE DIAMONDS
CASH or CREDIT
Terms: 20% Down and $1-$2-$3 Weekly.
We trust any Honest Person
Write for Catalogue o-day
JACOB BROS., Diamond Imp., 15 Toronto Arcade, Toronto

you give them time enough—"

"Oh, please don't," whispered the soft-hearted manager, "it seems so rude to question her that way—" aloud she said, "Won't you come and have an ice, Miss Twitchell, or a frappe or something? It's really very nice."

Miss Cornelia moved hurriedly. "Thank you, my dear," she said faintly, "Yes, I'll have an ice." She felt herself drawn apart, into one of the palm-decked recesses, but she knew that curious and doubting eyes were following her. She suddenly, as she sank into a camp-chair, felt very tired and worn.

The soft-hearted manager fluttered over her with a gentle word or two about the heat and the crowd, while Miss Cornelia gulped down minute portions of the ice. Suddenly something, a longing to be herself, made her say very quickly in a frightened little whisper—

"My dear, I—I can't cheat you any longer—I'm just a wicked old woman, and not Miss Twitchell at all!

"Hush," murmured the soft-hearted manager, "go on eating your ice, dear."

"I'm not Miss Twitchell at all," persisted Miss Cornelia—her voice was broken a little, and her face had gone gray, 'I'm just one of the inmates, and I've never been to a party in my life and I wanted—wanted to come!"

"I know," murmured the soft-hearter manager, "I saw you in chapel on Sunday—just at first I couldn't remember, but afterward I did, and I'm so sorry. Don't you think, dear, after you've finished, you'd better slip quietly out?"

Miss Cornelia put by her plate with a trembling hand.

"Oh, no," said the manager, "wait and finish it, please— it's so nice."

But Miss Cornelia shook her head. 'No, I'd rather go—and—and—thank you for being so kind to a wicked old body like me—but I just couldn't go on deceiving you, I had to tell you the truth!"

(Continued next issue.)

Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatmeut is highly recommended to adults troubled with urine difficulties by day or night. Address

Mrs. M. Summers
BOX 309 WINDSOR, Ontario

DATE CUSTARD PIE

1 Cupful Finely Chopped Dates
½ Teaspoonful Salt
2 Cupfuls Milk
4 Tablespoonfuls Butter
4 Tablespoonfuls Flour
3 Tabelspoonfuls Sugar
2 Eggs

Mix the salt with the flour and stir into the butter, which has been melted. Add the milk an stir over a moderately hot fire until it comes to the boiling point. Add the dates and the sugar. Now move the vessel to the back of the stove and let the mixture simmer until the dates have softened. When slightly cooled, add the beaten yolks of the eggs and pour into a lined pie-tin after the pastry has been allowed to harden. Use the whites for the meringue, adding after the custard has set.

PRUNE CUSTARD PIE

1 Cupful Seeded Prunes
3 Tablespoonfuls Sugar
1 Tablespoonful Corn-starch
1 Salt-spoonful Soda
2 Eggs
1 Cupful Sour Milk
Pinch of Salt

Stir the sugar and salt into the beaten yolks. Add the milk to the corn-starch into which the soda has been sifted, taking care that it does not form lumps. Add the two mixtures together and stir in the prunes, which must be chopped finely so that they will mix thoroughly. Pour this over the pastry and bake. Use the whites for meringue, flavoring with lemon-juice.

DAMSON PRESERVE CUSTARD PIE

1 Qt. Damson Preserves
3 Eggs
1 Tablespoonful Corn-starch.
1 Cupful Butter or Butter Substitute

Drain the juice from the preserves and remove the stones. Mix the beaten egg yolks with the damsons, add the butter, and then the corn-starch to give it body when cooked. Bake and add the meringue in the usual way. This recipe makes two pies.

Minard's Liniment Co., Limited.

I was very sick with Quinsy and thought I would strangle. I used MINARD'S LINIMENT and it cured me at once. I am never without it now.

Yours gratefully,
MRS. C. D. PRINCE.
Nauwigewauk, Oct. 21st.

LUCK

is altogether a matter of "U." "Luck" cannot get you very far. It may get you started but it will not keep you going. The lucky person, the one who can do something real well. We can help you. Write us today.

Moncton Business College
Moncton, N. B.
Our School is Accredited.

Doing Our Bit

The most patriotic service we can render is to continue to fit young people to take the places of those who have enlisted.

There will therefore be no Summer Vacation this year. One of the principals and other senior teachers always in attendanace.

Students can enter a tany time. Send for Catalogue!

The St. John Business College
S. KERR
Principal

Sunshine Furnace Efficiency

McClary straight walled firepot—no ashes to absorb heat.

The test of furnace efficiency is the volume of heat it conserves for **actual use**, from the heat generated in **burning** your **fuel.**

There is a fixed volume of heat in every kind of fuel, whether it is wood, soft coal or anthracite.

The business of your furnace is to extract **all** the heat, which **all** furnaces do—and to conserve the **maximum** of it for use—which the **Sunshine** furnace **does.**

The Sunshine semi-steel firepot is built with **straight** walls—not sloping to form and hold a non-conducting deposit of ashes. A very important point in furnace efficiency.

The grates of the Sunshine furnace are equal in area to the firepot, so that fresh oxygen—without which proper combustion is impossible—flows to every part of the fire all the time.

All air passages are exactly proportioned so that neither too much nor too little air passes over the radiator—there can be no superheated air, nor any under heated air, sent to the rooms above.

The doors, drafts and dampers are machined to fit snugly and to exclude heat-wasting air currents from the outside.

Usual sloping wall firepot. Blanket of ashes absorbing heat.

Engineering Service Free.

McClary's own heating engineers are at your service when you buy a Sunshine Furnace, to give you free expert advice on your home-heating requirements. Write to the nearest McClary Branch and ask for particulars about this service. A booklet, "Comfort in the Home," makes clear all the things you want to know about furnaces and it is sent free on request.

McClary's Sunshine Furnace

London Toronto Montreal Winnipeg Vancouver
Calgary St. John, N.B. Hamilton Edmonton Saskatoon

41

Runners May be Prevented in hose that are too tight over the knees by splitting the back seam down halfway and neatly inserting a V-shaped gore taken from the back of a discarded hose.

Root Vegetables, such as turnips and carrots, that have been withered need not be thrown away. Revive them by slicing off the ends and laying them in cold water. In a few hours their natural freshness will be restored.

An Excellent Table Pad, which may be used in place of a flannel or asbestos silence cloth, may be made by sewing together eighteen or twenty sheets of newspaper and covering them with heavy muslin.

Bean Sacks Make Splendid Roller Towels for the kitchen, and your grocer will be glad to sell them to you at a small cost.

Your Lettuce Will Not Wilt and therefore have to be discarded if you will wash it thoroughly and keep it in an earthen jar tightly covered.

If Your Hot-Water Bag is past mending do not discard it, but cut off the top, open the bag out flat and cover it with a pretty colored linen. Fold into the desired shape and use as a wash-cloth, toothbrush, soap and sponge holder when travelling.

Less Fuel Will be Required and less food wasted if food is served as much as possible in individual ramekins and custard cups. This is particularly true of baked meat molds or timbales, custards and other individual desserts.

Correspondent Answered

"What does one raise when he sows wild oats?" asks a correspondent. Well, we know one young man who raised cheques. And his crop led to a close crop in the State's prison.

When Children's Ribbed Stockings are hopelessly worn out, unravel the remaining parts of the legs, wind the cotton or wool on a spool and use for darning other stockings.

A Small Bookrack may be made from a good sized wooden box, by adding shelves and papering it inside with a plain paper to blend with the walls of the room. The outside may be varnished or covered with cretonne.

Old Suspenders, Washed and Ironed, make splendid inside belts for skirts. Since they are narrow, lap two edges together and stitch them on the machine. They do not get flimsy after washing, as regular belting does.

HOW SHALL WE DRESS IN WAR TIME

The question of how to dress in war time confronts every woman who wants to do her bit—and who doesn't? Was there ever a time when the women of the world played a greater part! The world today has an army of women workers, women from every walk of life, working side by side in the hospitals and reconstruction work abroad, in the Red Cross, the Y. M. C. A., and in war relief work of all kinds here in America. Their thoughts and their hearts are not intent on gaiety or even on their own interests, but on how they can help in this great fight— a fight that has become theirs, since it takes those they love.

Naturally, then, there is a seriousness which compels simplicity even in clothes; lines are straighter—to save wool for soldiers; and dresses are fewer—to save pennies for the sufferers.

The hopeful person in times of stress is she who retains her poise—her sanity. And to this problem of dress, as to all others, let us bring sanity. Let us dress with moderation in the clothes of the new season; let us choose those which are suited to the work we are doing. If we have a war job let us have a war job dress—a simple tailored frock or suit; if we have a social duty, again let us be suitably gowned in a softer dress. Let us buy what we need sanely and wisely for ourselves and our children, in proportion to our incomes, remembering that in buying wisely we are sustaining not only the clothing inudstries but the great allied interests as well. Let us keep these industries going, but let us abstain from needles luxuries, when by so doing we may add our mite of thrift and help to our cause. And our mite, be it only the War Saving Stamp of the youngest girl who reads this, is a real and vital help to our Government. And, above all, be cheerful. Look your best. Do your best. Don't let yourself down; don't let others down. Keep yourself and your home in readiness for the flying visit of its absent soldier. It is in such ways as these that we do our part.

Mothers of young children have a distinct duty just now. Feed a growing child as he should be fed, and you have helped make a good citizen. We sall need good citizens after the war as greatly as we do now. Every child has a right to a useful body and mind. These he cannot have without the right food at the right time. How serious it is when mothers through careIessness or from ignoranace, permanently injure a child's chance in the world!

It has been stated that the most important period in one's life is the first five years. Where is that time spent? In the home. Why is that period most important? Because habits are formed then that remaini with one throughout life. Not least among these early habits are the food habits acquired. How inconsistently some mothers are regardinig the wants of the child at this time. A mother often spends much tiime and thought in the selection and making of the child's wardrobe, but puts any kind of food in his stomach and boasts that her baby can eat "anything." Instead of indicating great precocity in her child, she is only exposing her ignorance. One should as quickly put French heels and corsets on a child as to put "grown-up foods" in his stomach.

Do not force a child to eat. If he is not hungry, do not try to tempt his appetite by offering sweets when simple food is required.

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Teach him to chew his food thoroughly.

Keep the child happy at meals. "Laugh and grow fat" applies to children as well as adults.

Do not give children highly seasoned food. This is avoided by taking out the child's portion before seasoning the dish for the family.

It is far better to give the child his meal apart from the family when you may take time to train him in good eating habits.

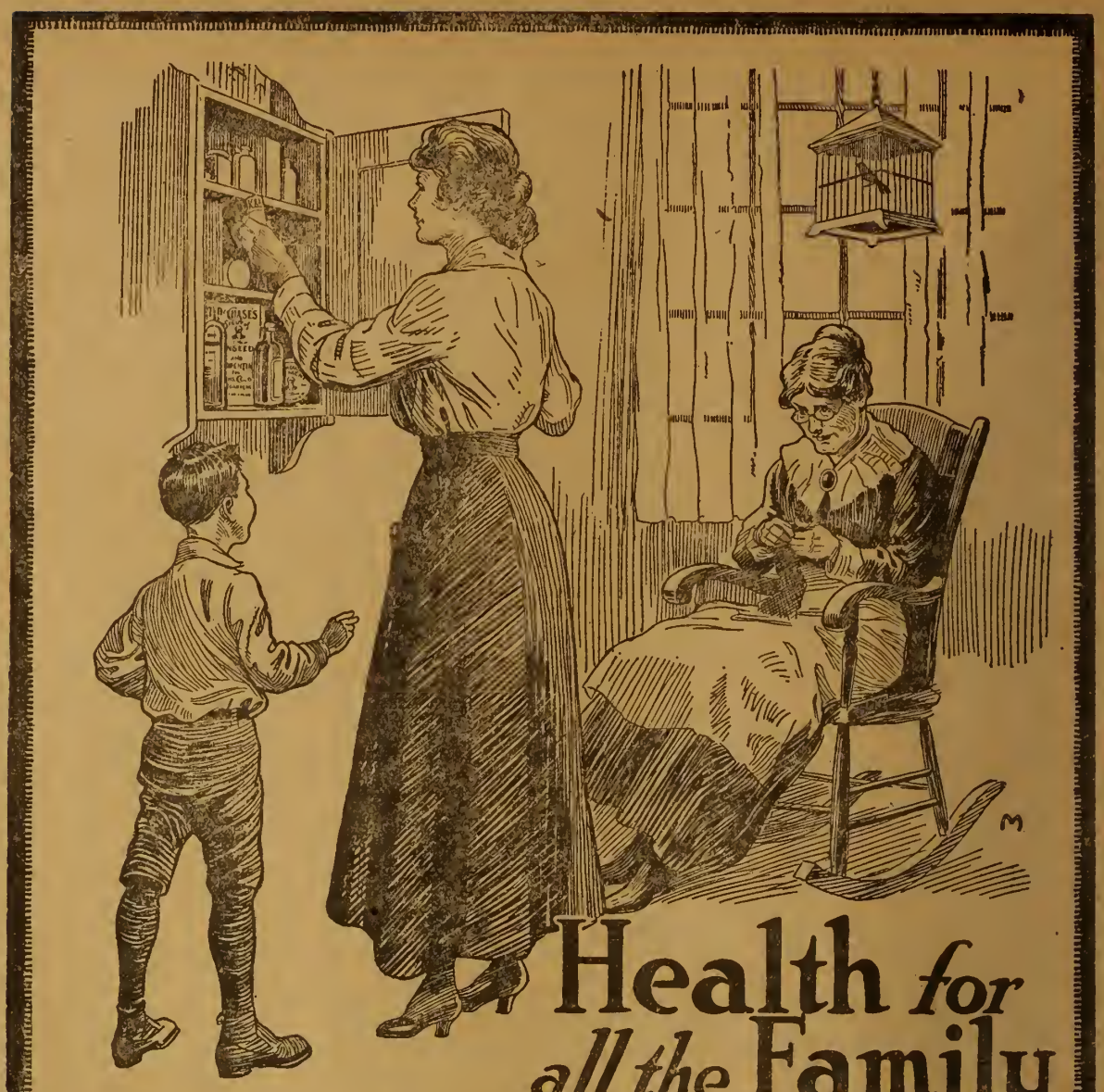
The value of milk can not be overestimated; use of oatmeal, hominy, and cornmeal, as the chief source of energy, is always wise; little or no meat is necessary until a child is six years old; little or no sugar is needed, if the child has the proper fruits.

An evening of fun, which can be turned into a money-maker as well, is the little party decsribed in this column. In these days when half the world is at war, there are so many worthy appeals which must be met that this asmusing little party should offer some welcome suggestions. The Red Cross needs our help in every possible way to tmeet the many demands for the sick and wounded—among them perhaps some of our own boys who have gone across to fight our battles for us!

Try an Alphabet Party and see what a fat check you can send to the needy ones. Word your invitations as follows:

"Here is quite the newest yet—
Mr .and Mrs. Alphabet
Will entertain on————eve
It will be fun, you may believe.
Two cents a letter for your names
Is all it costs to joi the games
And feed in an alphebitical way.
We need the money, you the fun,
We'll all be sad if you stay away.
At eight and thirty, 'twil be begun.

Collect your admision fees at the door and give each guest, or group of guests if there are a great many, a sheet of paper bearing a single letter of the alphabet. Within a limited time each must construct a four stanza verse, each line of which begins with the letter drawn. This may be made a source of great amusement by suggesting topics of local interest. Bind all the verses together into a booklet



Health for all the Family

MODERN, artificial methods of life make it absolutely necessary to use medicines occasionally to ensure the regular and healthful action of the liver, kidneys and bowels.

In the great majority of homes Dr. Chase's Kidney-Liver Pills are recognized as the most satisfactory regulating medicine for all the members of the family.

This medicine is not in any sense a cure-all, but its use occasionally, as required, ensures the activity of the liver, kidneys and bowels, the cleansing of the system, and the purifying of the blood.

For this reason you can depend on Dr. Chase's Kidney-Liver Pills to prevent and cure constipation, torpid liver, indigestion, kidney derangements and resulting painful ailments, such as backache, rheumatism and lumbago.

Dr. Chase's Kidney-Liver Pills are so universally used that you can obtain them at any store where medicines are sold.

Dr. Chase's Kidney-Liver Pills

One pill a dose, 25 cents a box, all dealers or Edmanson, Bates & Co., Ltd., Toronto.
Do not be talked into accepting a substitute. Imitations only disappoint. 11

at the close of the contest, and give them as a prize to the most sucessful poet.

SCALES SHOULD BE A PART OF KITCHEN EQUIPMENT

Every household kitchen should be provided with a set of small scales for weighing small articles purchased by the pound. We are so in the habit of assuming that all weights are correct that this little precaution against unfair weights and unavoidble mistakes is omitted. The honest merchant will welcome your checking your dealings with him, and will apreciate the co-operation. A small balance of the platform type can be had for $2.00 or a little less and will be of great value to the household.

HOW TO CLEAN SENSIBLY

It is always possible to let cleaning go, but no housekeeper wants a disorderly house. To reduce labor and still keep order, let go the idea that anything but surface cleaning needs to be done regdlarly. Scraps and litter and surface dust should be removed daily, but other cleaning, such as carpet-shaking, paint-scrubbing, closet-cleaning, window-cleaning and all such work as women are wont to plan to do once a week or once a month or once ayear, is very often done at a stated time as a matter of course—whether there is a real need for it or whether there is not.

Just now it is housecleaning time, and many a cellar and attic will be overhauled because it needs it, and many others will be overhauled just because it is house-cleaning time.

To my mind there should be no such thing as a housecleaning. There should be no appointed time for the taking up of rugs and carpets and the overhauling of closets and the scrubbing of paints. To turn a house topsy-turvy to clean shows bad management. Such things should and can be done one at a time as they are needed, without exhausting the housewife or her family.

EPSOM SALTS FOR TURKEY POULTS

I have been feeding Epsom salts to poultry and it seems to me one of the best medicines for poultry I have ever used. It is much easier to prevent disease among poultry than it is to cure it, and I have used the salts as a preventative. It has proven very valuable to me.

I wish to tell of my experience in curing young turkeys of bowel trouble, which is usually called cholera. For several years we had been raising turkeys, sometimes with success, but generally our luck was varied. Every year we would lose some with bowel trouble. Last summer our turkeys seemed to do well for a time and then they began to die. Many of them were so sick they would not eat. With the help of members of the family we went to the turkey lot and tried the last thing towards saving them. We mixed salts with water and wheat bran, and put this down the throats of the turkeys so they were compelled to swallow it. Some of them got, perhaps, nearly a teaspoonful of the salts. This was continued for five or six days on the entire flock. All except two that were too near dead, began to grow stronger. Gradually they improved and in about ten days they began to eat, but they became afraid of their "feeders" and we were compelled to put the salts in their feed. They soon began to grow fast and by October they were as large as the old turkeys.

Although the poults required lots of care and the treatment was lots of bother, yet I believe it was time well spent. Chickens can be cured of bowel trouble in the same way as I have cured chicks that would surely have died without the treatment. The doses for chicks should not be as large as we gave the poults. A teaspoonful will make a dose for three chickens. I am sure the salts will keep them in good condition. JOHN E. FISHER.

SHERWIN-WILLIAMS PAINTS & VARNISHES

COVER THE EARTH

"COMMONWEALTH" BARN RED

The Paint for Barns, Roofs, Fences, Etc.

S-W COMMONWEALTH BARN RED is a bright, rich Red, that works easily, covers well and dries with a fine, smooth, durable finish. Put up in convenient sized cans, all full Imperial Measure. Why not try it this year to protect your barn against the weather?

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GIVE him a Bicycle. He will get a lot of good, healthy fun out of it, and make himself mighty useful as well. You'll find it the best investment you ever made. Saves gasoline. Costs nothing for upkeep. Always ready for instant use.

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This Mark Is Your Protection
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Twice as easy as walking-Three times as fast

TREES INJURED BY MICE OR RABBITS CAN BE HEALED

(Continued from page 553)

serted, should soon unite with the stock and then carry the sap to the top of the tree.

One of the most satisfactory methods of utilizing the badly girdled tree is to cut it off close to the ground and insert a scion of some good variety. This graft should grow at least three feet in height the first season and make a nice young tree.

A young tree may sometimes be saved when the girdling is well above the graft by cutting the tree back so as to remove all of the injured part. Under such conditions young trees will usually make new growth and the strongest shoot may be selected to form a new trunk and top life for the tree. This method is not usually very satisfactory if the injury occurs more than two years after the tree has been planted.

DOUBLE DAILY SERVICE TO PRINCE EDWARD ISLAND

ALL RAIL SHORT ROUTE

Tormentine—Borden and Car Ferry

With the Summer Time Table in effect June 2nd, there will be a double daily service between the Mainland and Prince Edward Island. Passengers by the Maritime Express from Montreal and the morning expresses from St. John and Halifax will be able to arrive at Charlottetown 7.05 p.m., Summerside, 6.05 p.m., and Tignish 9.35 p.m. By the Ocean Limited from Montreal, the Boston express via St. John, passengers will arrive Summerside at 11.00 p. m. and Charlottetown 11.20 p.m. From the Island by leaving Summerside at 6.30 and Charlottetown at 6.00 a. m., passengers will connect with the Ocean Limited for Montreal, the express for Boston and the Maritime Express for Halifax. By leaving Tignish at 9.30 a.m., Souris 6.45 a.m., Charlottetown 12.50 noon, and Summerside, 1.30 p.m. passengers will connect with the Maritime Express for Montreal.

CONTROL OF SWARMING

(Experimental Farms Note)

One of the greatest problems in beekeeping today is the control of swarming. tI is natural for a strong colony of bees to swarm in early summer when honey is coming in, but the breaking up of the colony cuts down the honey yield; while watching for and hiving swarms takes a great deal o fthe beekeeper's time, and the swarm may escape notice and fly away.

The methods of controlling swarming that have been tested at the Central Experimental Farm, Ottawa, fall under three heads.

(1) General measures. Partly shading the apiary; providing a large entrance with deep space between combs and floor; giving plenty of room in the brood chamber and supers; and young queens. These measures, while valuable, have been found insufficient in themselves to prevent the bees from raising queens in preparation for swarming.

(2) Manipulations to prevent more than one swarm. The queen's wings are clipped, preferably during fruit-bloom, and when a prime swarm issues and is still in the air, the queen is picked up from the ground and placed in a cage, and the hive is removed to a new stand. A new hive containing the caged queen is then placed on the old stand to receive the returning swarm, the queen being liberated later. The field bees join the swarm, leaving the parent hive so much weakened that it is not likely to swarm again. To make certain of this, however, the parent hive may be merely turned around and not removed to the distant stand until five days later. This method of swarm control necessitates immediate attention when the swarm issues, but, as the manipulations are simple, they can often be carried out by the home folks should the beekeeper be away.

(3) Manipulations to prevent swarming altogether. At the time of writing, none of the manipulations that have been tried has succeeded except the cutting out of all queen-cells every seven or eight days, and this failed during a heavy honey flow from clover at Ottawa in 1916 when the bees raised queens from worker larvae, and swarms issued before the queen-cells were capped over. It has, however, been found possible to prevent swarming in out-apiaries, forty miles north of Ottawa, by this means, although it entailed weekly visits from the middle of May until the middle of August, and much time was spent in examining each colony.

Experiments in the control of swarming are being continued, especially along the following lines, which seem the most promising:—

(1) Testing systems of raising brood to the super. Many of these will delay swarming under some conditions.

(2) Finding means by which the brood chamber may be easily examined without lifting off the supers. A hive in which the brood combs are in a rack that can be drawn out sideways is being tried.

(3) Endeavouring to breed a strain that will not swarm, of which the preliminary step is to find out if the non-swarming character shown by some queens is inherited. A queen showing this character was found to retain in the following year.

ADVANTAGE OF STRAIGHT COMBS

Beekeeping in New Brunswick is in its infancy—here and there we have a man who has read up on the subject, and putting theory into practice has succeeded, and has been able to gain practical knowledge to convince him that there is money in the business, if properly attended to.

There seems to be one point about which there appears to be many confused ideas and that is, the hive question. Some people buy modern hives and pay big prices for them without considering why these hives were designed. They hive their swarms, in some cases without comb foundation, and the bees arrange matters to their own sweet will. Modern hives, without modern methods, are no better than the old box hive—sometimes not as good. Langstroth designed the first good working frame hive—his idea being to have straight combs, every one of which could b etaken from the hive and returned with the least amount of disturbance. This hive has been adopted by all sucessful beekeepers. There are many modifications of the first type of Langstroth, but practically every frame hive in use today is patterned after the Langstroth principle. It is considered a crime to keep bees in hives in Ontario, and bee inspectors have the authority to warn the beekeepers that unless their bees are placed in frame hives within a reasonable length of time they will be destroyed. This law is rendered necessary because of the seriousness of the diseae situation in that Province.

Modern hives with frames properly wired and filled with foundation are a satisfaction to the beekeeper and a joy to the inspector.

Every large producer of honey has his frames wired and embedded in the foundation, or he could not put them through the extractor without a large amount of breakage. The wires keep the foundation from warping when the bees are placed in the hive, and thus he has straight combs tbat can be taken from the hives and replaced without mashed bees or leaking honey.

When queens become crowded for laying space swarming is bound to follow—unless we can remove some of these combs and place empty combe ni their place. This is impossible in any hive with crooked or immovable combs.

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IF your Binder bears the MASSEY-HARRIS TRADE-MARK you can rest assured that your Harvesting operations will be completed ON TIME and to your entire satisfaction.

Harvest Days are busy days—every minute counts, and a delay in the completion of the cutting may mean serious loss. You can't afford to take chances—it's better to be sure than sorry.

The Massey-Harris Binder

is known the World over for its Reliability.

This is no idle statement but is backed up by the experience of thousands of farmers all over the world, many of whom have Massey-Harris Binders which have been in use for from 10 to 20 years and are still giving the best of satisfaction.

If you have never used one, ask your neighbor who has and profit by his experience.

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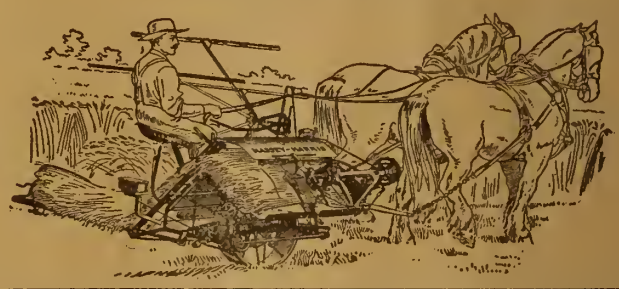

In the spring beekeepers nearly always have some colonies light in stores while others have more than they require. With straight combs this matter can be regulated by giving a comb of honey from the rich colony to the starving one. In swarming time some beekeepers make a practice of placing a frame of unsealed brood in the centre of the hive before hiving the swarm. This is considered a sure method of holding the swarm and well worthy of a trial by anyone.

As long as we keep bees in hives the frames of which cannot be handled we are working in the dark and can never expect success by any such haphazard methods.

ALSIKE AND WHITE CLOVER AS HONEY PLANTS

(Experimental Farms Note)

Farmers know the value of the two perennial clovers, alsike and white Dutch clover, for hay and pasture, but it is not always remembered that a large bonus may be obtained from them in the form of honey. They produce more honey in Canada than all other plants put together, and this honey is of the highest quality.

Production of clover honey is greatest in the farming lands of Eastern Canada. Almost the whole region south of the Ottawa River is excellent. The St. Lawrence River Valley is almost as good. The valleys of the St. John, and other rivers in New Brunswick, marsh hay lannds in Nova Scotia and the rich farming lands of Prince Edward Island and around Lake St. John, Que., are very good too. In the clay belt of Northern Ontario, notably around Haileybury and Dryden, these clovers grow in immense quantity and luxuriance, and some years produce heavy honey crops. While alsike as a commercial honey plant has reached its highest development in the Eastern Provinces, white clover does well in a large part of Manitoba and British Columbia.

The cultivation of clover on suitable lands as a combined farm and honey crop is ercommended as follows:—

(1) Growing alsike with timothy for hay. Alsike is better for this purpose than red clover because the latter is of practically no value for honey production and is beginning to spoil by the time the alsike and timothy are ready to cut. Alsike will grow on certain types of soil, for instance, ill-drained land, better than red clover.

(2) Growing alsike for seed. An abundance of honey bees increases the yield of seed per acre; and leaving the plant to produce seed lengthens the honey ow.

(3) Sowing white clover in grass mixtures intended for pasture. On favourable lands the white clover will keep spreading, improving the pasture both for cattle and bees. Grazing, if not too close, will not seriously curtail honey production, and it lengthens the honey-flow.

The honey-flow from clover lasts three to five weeks, beginning, according to latitude, between mid-June and mid-July. Good management of

the bees, to build them up strong in time for the honey-flow and keep them from swarming, is necessary. There is no better food for bees in winter than clover honey.

CANADIAN BANKERS' COMPETITION FOR BOYS AND GIRLS

In this competition, the Canadian Bankers' Association, acting in co-operation with the Dominion Department of Agriculture, Live Stock Branch, offers cash prizes to boys and girls who exhibit pigs or calves at their local fair, and who comply with all the rules governing the competition.

In districts in which there are School fairs the prizes shall be offered at the School fair unless in the opinion of the Managers of the Banks in the district, (to be ascertained by the bank earliest established in the district) the prizes should preferably be offered at the Fall Fair.

Rules

1. Only boys and girls who have not attained their 17th birthday before the opening day of the show are eligible to compete in the Canadian Bankers' Competition.
2. No entry fee will be charged.
3. No exhibitor shall be allowed to make more than one entry in a class.
4. Not more than one member of a family shall be allowed to compete in a class.
5. An exhibitor who wins a cash prize at one fair shall not be allowed to compete in the same class at another fair.
6. Calves and pigs entered for competition must have been born on or after March 15th, 1918, and must be the property of the exhibitor or the exhibitor's parent or guardian.
7. Grade bull calves, and grade boars, are not eligible to compete, and entries for same must not be accepted.
8. Exhibitors must feed and care for the animals they exhibit for at least six weeks.
9. An application form and a certificate form are attached hereto.

(a) The application form must be properly filled out and fyled with the manager of a local branch bank at least three weeks before the date of the fair.

(b) The certificate must be filled out and signed by the parent or guardian of the exhibitor, and fyled with the Secretary of the Fair not later than the day of the competition. If, however, an exhibitor fails to present his certificates on the day of the competition, he shall be allowed to compete, but any prize he may win shall be with held until a properly filled and signed certificate is produced, and said certificate must be forthcoming within forty-eight hours afte rthe holding of the competition, otherwise his prize money shall be forfeited.

10. In case the winner of a prize is subsequently disqualified, each exhibitor below him shall be moved up one place.

CLASS I.

(Grade bull calves must not be shown)
CALF, PURE BRED OR GRADE.
Prizes:—1st, $5.00; 2nd, $4.00; 3rd, $3.00; 4th, $2.00; 6th, $1.00; 6th, reserve.

CLASS II.

(Grade boar pigs must not be shown).
TWO PIGS, PURE BRED OR GRADE.
Prizes:—1st, $5.00; 2nd, $4.00; 3rd, $3.00; 4th, $2.00; 5th, $1.00; 6th, reserve.

OX WARBLES

In a recent issue of The Monthly Bulletin of the Ohio Experiment Station, the following statements are made with reference to the control of the ox warble:

"The only effective combative measure thus far known is the squeezing out of grubs from the backs of the infested animals in the early spring months. The eggs are laid during the summer mainly on the hair of the legs of cattle. Young maggots are found in the gullet during September—February, after which they appear under the hide on the back.

"These grubs may be located on the back by small swellings. Each lump is perforated by a small hole through which the grub emerges in the spring and early summer. After dropping to the ground the grub passes through the pupal, or resting stage, and in3 to 6 weeks the adult fly escapes from the pupal case and later the female lays her eggs on cattle.

"Killing all such grubs as soon as they are 'rips' and can be easily squeezed out of the back between the thumbs will control this cattle pest. All the grubs, however, must be killed in each herd before a community will be free.

"Hides are reduced in value from 1 to 2 cents a pound by the presence of warble flies, acocrding to estimates reported by hide buyers. Flesh must sometimes be discarded as unfit for food; milk yields are freueqntly lessened, and cattle in general are annoyed by the pests. Removing and destroying the grubs will tend toi reduce their numbers each year."

Are You Working for the Machine *or* Is the Machine Working for You?

No one wants to be bossed by a bell, or chased by a speedometer. Fixed-feed separators are hard taskmasters, unless cream waste means nothing to you. How much better it is to have your separator skim clean at any speed—working *for* you, not against you. Only one separator does this—the Sharples suction-feed. It skims equally clean at all speeds, averaging a saving of 10 lbs. of butter per cow yearly over any other separator. Every time you turn a Sharples you are saving the butterfat that will help win the war.

SHARPLES SUCTION-FEED CREAM SEPARATOR

—the *only* separator that will skim clean at widely-varying speeds

—the *only* separator that gives cream of unchanging thickness—all speeds

—the *only* separator that will skim your milk quicker when you turn faster

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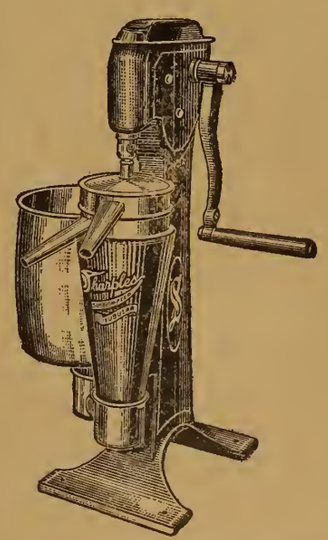

Remember—Sharples is the *only* separator that automatically prevents cream losses, and doesn't rely on human nature. Write for catalog today to nearest office, addressing Dept. 79

TORONTO, ONT. **The Sharples Separator Co.** REGINA, SASK

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HANDLING COW AT CALVING TIME

Much of the future usefulness of the dairy cow depends on the care given at calving time. If she is turned out in cold stormy weather, gets ice water to drink, and is improperly fed, the chances ar ethat she will prove a disappointment to her owner.

Acow should he dry from six to eight weeks. If milked right up to the time of freshening she will have a weak calf, and her pow of milk will not be as lrage as it should be. She should be fed liberally during her resting period to enable her to put on flesh and nourish the unborn calf.

The week before due to freshen our cows are fed lightly of feeds of a laxative nature—silage, alfalfa or clover hay and bran. This loosening up of the system will go a long way in preventing milk fever, garget and retention of afterbirth. I believe this is far better than the practice some farmers make of feeding patent medicine mixtures of unknown merit to cure all ills the cow is subject to during this time.

SHEEP AND SWINE

Sell the brogen-mouthed ewes and any others that have not proved good producers, and get the ewe flock in good condition before breeding begins.

Coughs and pneumonia from dusty beds ma yincidentally be prevented if louse-infested beds are oiled Breathing dust may cause death from pneumonia and certainly renders hogs less resistant to cholera.

Next to goats sheep are the greatest scavengers of weeds and waste vegetation known to the American farmer. Df 500 varieties of weeds and grass, 482 were eaten readily by sheep in a test at the Minnesota station.

One point that many farmers overlook in handling sheep is that they should have a change of range every few years. After sheep have run on one pasture for a period, they will do better if transferred to new range.

The reason for sows eating their pigs is largely a matter of feeding. To avoid this trouble give the sows a good growing ration without too much corn or other fattening food. Give them roots or potatoes occasionally and plenty of exercise.

You May Dream Dreams

and see Visions, but to make your Dreams come true—and your Visions materialize—generally means having a little capital to start with.

The way to get capital is to save a part of what you now earn.

Decide, now, to let us help you to save. Interest paid every six months.

Paid-up Capital	$ 6,500,000
Reserve Fund	12,000,000
Resources	130,000,000

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W. J. OSBORNE, PRINCIPAL,
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Butter Parchment at Farmer Office

ONLY HEIFER THAT IS WELL DEVELOPED WILL DO HER BEST AS A COW

The writer wants to confess right here that he has grown some cows that are too small today, that are limited in productive power on that account, because he did not know how to feed a calf, and because he did not appreciate the importance of keeping the young heifers growing every day until they were fully developed. Today the younger cows on our little farm are larger than the others and our young heifers are much more promising because wihle we have a great deal to learn, we have discovered some things that help.

First. We are feeding more new milk to the young calf than we formerly did. It takes courage to feed whole milk to a calf when butter-fat is above fifty cents. We may modify it with skim-milk to the above proportions. In my own practice I discontinue most of the whole milk by the time the calf is four weeks old, substituting it with skim-milk. But I continue to allow the calf two pounds of whole milk per day for two or three weeks longer.

The danger of over-feeding must always be guarded against. More calves are compelled to drink too much skim-milk than are fed too little. The amount they are able to take with profit depends upon their weight and upon their individuality..

The matters of grain and roughage are very important in the development of the calf. Calves should begin to eat a little of grain by the time they are three weeks old, but only a little. The practice of putting a small amount of grain in the bottom of the pail after the calf has finished the milk is not objectionable, but if handled right the animal will soon learn to eat dry grain from a box and this is a more convenient way of feeding. Great care should be taken not to give the calf too much grain at the start. If we do we shall disturb the digestive process, the calf will get a set back, will refuse to eat the grain and we shall have a lot of unnecessary bother. There is not the least trouble in the world in teaching a calf to eat anything it ought to eat if we proceed slowly enough. In time, when the calf is accustomed to grain, it may be given all it will eat up clean without any danger of trouble.

The matter of roughage is as important as that of grain. Here to we should begin carefully and proceed slowly. A very little clover or alfalfa at first, or even mixed hay will answer. I would only give the calf a little. What the animal wastes does it no good. By the time the calf is four weeks old it may begin to eat ensilage. Indeed, I have fed ensilage to calves as the only roughage and had them do very well. With hay at present high prices, and with silos filled with the abundance of corn that was worth little for anything else, I should not feed much hay to calves this winter. As soon as I had determined the amount of grain the calves would clean up with a relish I would put that grain on the ensilage exactly as for the older animals, always taking care not to feed them a greater amount than they will consume in from half to three quarters of an hour. The practice of keeping feed constantly before young animals is bad. The ideal feeder will know how much the animals will consume promptly. He will feed them to this limit and will not be in the least disturbed to see their mangers perfectly cleaned until the next feeding period arrives. A friend of mine, one of the most successful dairy men I know, says he wants his cattle to be anxious enough for their feed so that they will try to jump into the silage car as it passes in front of them, and yet several of those heifers are making two pounds of fat per day during this cold weather. Nobody ever saw a bovine animal with that kind of an appetite if it were in the hands of a careless feeder.

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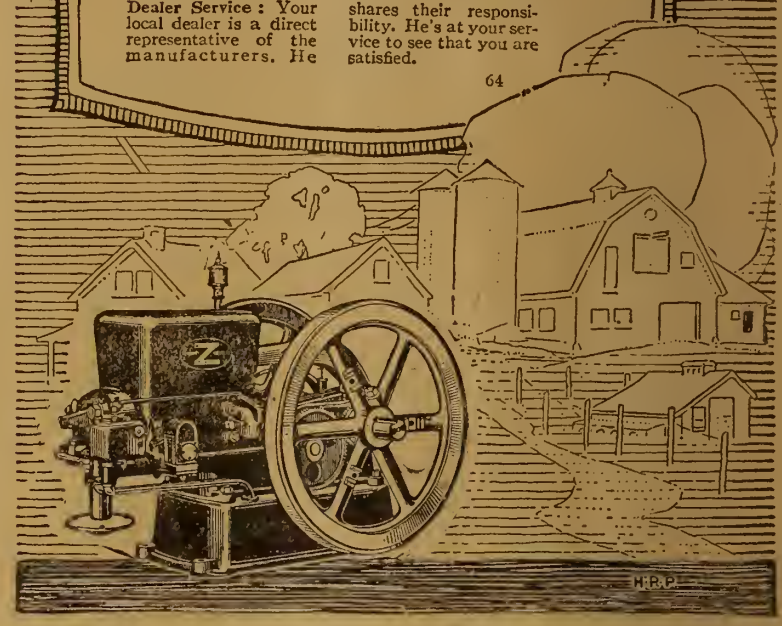

Skim Milk as a Frame Builder

There is a tendency not to continue the skim-milk long enough in the life of the calf. We have been getting splendid results from skim-milk without knowing why. Personally I used to think of it merely as a source of protein, but I did not know that the

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A handsome, durable, economical roof that can be laid by anybody without previous experience or special skill. Just unroll Amazon and nail it on the roof.

It is not too heavy to handle easily. It is very pliable, easy to cut and fit, and very tough. Nails, cement and caps are supplied free.

Amazon is handsome enough for a dwelling, durable enough for a factory, inexpensive enough for farm buildings.

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Ad. No. 4.

protein in the milk was two and a half times as available as the protein in grains, and yet such is the case. I used to think of the value of the milk sugar but did not fully understand its availability but the thing we all overlooked in the past, I am sure, is its mineral value. No animal can be developed normally without a proper proportion of mineral in the ration. To deprive a young animal of milk is to limit the ultimate size. If we are constructing a building we first erect the frame. We cannot build a dairy animal without a frame, and to make the frame takes mineral in plenty, and we cannot build it anywhere so easily or so cheaply as in skim-milk. We should continue it until the animal is six months old at least, and preferably for a longer timie.

It is hard to over-estimate the value of good pasture for young dairy animals. Last fall I turned a bunch of heifers into some very fine clover and it was interesting to watch them grow. Yes, good pasture is all right, nothing in the world is better for dairy animals of any age, but it is scarce and where it is not good we must supplement with something else. It will not do to let these young animals stop growing. A little grain once or twice each day, some oats and peas in their season, cornstalks a little later on, a patch of alfalfa close by, all these will help. Perhaps the most convenient thing of all is the summer silo but the all important matter is in some way to keep these young animals growing.

The dairy heifer at from two or two and a half years of age should be a well developed animal. If she has been neglected she may be partially developed after her work as a cow has begun but she will never reach the extent of production of which she might otherwise have been capable. The writer has a cow of very strong milking tendencies. When a calf she was unfortunate in having more than a calf's sare of indigestion. When she freshened the first time she was under size. She soon gave thirty-two pounds of milk per day, but she could not consume feed enough to continue at that rate of production so she borrowed from her little body until her production diminished to a point where she could eat enough to keep even. She is naturally a good cow but I am losing anywhere from $10 to $25 a year by not having assisted that animal to grow a strong body that was able to do the work for which her inheritance has fitted her.

And now may we say a word in closing, about feeding the heifer during her first period of lactation. Here again it is up to the man. Truly, it takes a wise man to develop a dairy animal, to know just how and when to feed, to know what to feed and how much, to watch the cow from day to day and feed her as an individual and not simply as a member of the herd. These are requisites of a good dairy man but to acquire them takes application and experience. No heifer is fully developed at two years. The lighter breeds may begin milking then with profit, but the Holsteins should have a little more time. During the first milking period two objects should be kept constantly in view. First, the further development of the animal, and second the production of milk in paying quantities. We must not overfeed for we do not want to impair digestion and limiit development, and we must not under-feed because if we do the animal will fall off in flesh, then in vitality and we shall be very sure to fail in our purpose.—W. F. TAYLOR.

Oats is a good poultry food. There is some risk, however, in feeding whole oats. The hulls may cause impacted crops and death. The best way to feed oats is to crush them, sift the hulls out and feed in the mash.

The shell of an egg is porous and filth on the shell will enter and poison the contents. For this reason dirty eggs should be cleaned as soon as gathered. A little baking soda on a damp cloth will assist in cleaning the eggs. As little water as possible should be used, as water opens the pores of the shell, causing rapid evaporation of its contents, and permitting the entrance of germ life, which causes decay.

It is never a paying policy to keep the large, slow-moving hens and the small, active hens in the same flock. They require different methods of feeding and attention.

Hens should be kept in a state of contentment. The attendant should handle them gently. A fright that sends the hens to the tree tops will check egg production. The dog should be kept out of the poultry yard.

McLAUGHLIN VALVE-IN-HEAD MOTOR CARS

"Motorwise" Buyers are using McLaughlin Cars

McLAUGHLIN cars are more and more coming into popular favor among Motor wise men who make a minute study of real motor car value.

Now that motor cars are such a factor in business, men look for that particular make of car representing highest value for the amount involved. McLaughlin cars give uninterrupted service due to their efficiency.

Men who buy McLaughlin cars are assured of real service—the kind of service which many companies are unable to give.

McLaughlin cars are made in Canada at the large McLaughlin factories in Oshawa. They are distributed through 12 directly owned McLaughlin branches, and over 400 dealers. Branches and dealers keep repair parts and expert mechanics, assuring prompt and efficient service when it is needed.

"ORDER NOW AND BE ASSURED OF PROMPT DELIVERY"

The McLAUGHLIN MOTOR CAR CO., Limited
OSHAWA, ONTARIO

E-6-45 SPECIAL.
LOCAL SHOW ROOMS

SEE THE McLAUGHLIN LINE AT THE LOCAL SHOW ROOMS

BENSON'S CORN STARCH

deserves a place in every home, because it makes dozens of delicious, economical summer desserts.

The Canadian Standard for more than half a century.

AT ALL GROCERS

124 MANUFACTURED BY
THE CANADA STARCH CO. LIMITED, MONTREAL

MARKETS.

CHARLOTTETOWN

June 6.—Beef, retail 8 to 26c; carcass 12 to 16c.
Veal—Carcass 12 to 15c.
Hogs—22½c for selects.
Lamb—None.
Mutton—15 to 18c.
Beed Hides—10 to 12c.
Sheep Skins—$3.50 to $5.00.
Calf Skins—20c.
Potatoes—50c bushel.
Carrots—None.
Turnips—20c cash.
Parsnips—None.
Oats—85c to $1.00 bushel.
Cornmeal—$4.00 to $4.25.
Bran—$2.20 to $2.25.
Oatmeal—$6.50 bag.
Middlings—$2.50 to $2.75 bag.
Cotton Seed Meal—None.
Oil Cake—$3.80 to $4.00
Buckwheat—None.
Manitoba Flour, War grade—$12.50 to $13.00.
Chickens—None.
Fowl—None
Turkeys—None
Geese—None.
Butter, Creamery—44c to 45c.
Buttter, Dairy—40 to 45c.
Cheese—None.
Eggs—32 to 33c.

MONTREAL

The Provision Market

Montreal, June 6.—A decidedly weak feeling developed in the Toronto market for live hogs yesterday and prices dropped $1.50 per 100 lbs. with sales at $18.75 per 100 lbs. weighed off cars, and at $18.50 fed and watered. There was no further change in the condition of the Winnipeg market, but the tone was easy at $17.75 for selects weighed off cars. In sympathy with the above the local market was weaker today and prices scored a further decline of 50c per 100 lbs. The offerings were small, but ample to meet all immediate requirements and sales of selected lots were made at $19.50 to $20 per 100 lbs. weighed off cars. The market for dressed hogs was quiet and easy and lower prices are expected in the near future. The demand was limited and only for small lots to fill actual wants. Sales of abattoir fresh-killed stock in a wholesale jobbing way were made at $29 to $29.50 per 100 lbs.

There was no actual change in the condition of the market for smoked or cured meats, but the feeling was easy and the prospects are that if prices for hogs go any lower there will be a re-adjustment of prices in the near future. The demand continues steady for domestic consumption and a fair amount of business was done in a wholesale jobbing way with sales of 8 to 10 lb. hams at 38c per lb., 12 to 15 lbs. at 34c to 35c, and heavier weights at 32c to 33c, while breakfast bacon sold at 41c to 42c, Windsor selected bacon at 44c to 45c, and Windsor boneless bacon at 46c. The tone of the market for barrelled pork is also easy with only a small trade passing in a wholesale jobbing way in Canadian clear fat back pork at $62; Canadian clear plate pork at $61, and Canadian sort cut back pork at $59 per barrel.

The tone of the market for lard remains about steady with a fair demand for supplies and sales of pure leaf grades in a wholesale jobbing way were made at 32c to 33c per lb. in 20 lb. wood pails, and compound lard at 27c per lb.

Mill Feed and Rolled Oats

Montreal, June 6.—A steady business continues to be done in most lines of millfeed, and the market is moderately active, with no change in prices to note. Sales of pure grain moullie were made at $72; bran at $35, shorts at $40, and other grades of feed at from 5$1 to $68 per ton, including bags, delivered to the trade. The demand for oat product continues rather quiet and prices are unchanged with car lots of rolled oats quoted at $4.85 to $5 per bag of 90 lbs. ex track, and in broken lots at $5.10 to $5.15 per bag, delivered to the trade. There was no change in cornmeal, for which the demand is steady, and a fair business was done in broken lots of Golden grade at $6.25 to $6.40, and bolted at $4.50 to $4.75 per bag delivered to the trade.

The Baled Hay Market

Montreal, June 6.—The condition of the market for baled hay was unchanged . The receipts at present are small, but stocks on spot are large, and especially so of the low grades, for which there is practically no demand just now, while the trade in the higher grades is only moderate. There was no further change in prices, but the tone of the market is easy, with car lots of No. 2 hay selling at $15.50, No. 3 hay at $13.50 to $14, and clover hay quoted at $6 to $9 per ton ex track.

Country Produce

Montreal, June 6.—A somewhat unsettled and easy feeling prevails in the egg situation, but there is no actual change in prices to note as yet. Storing at the lower level of prices now ruling in the country is reported to be more active than previously on the part of some firms. With the limitation of profits on eggs, the trade generally is taking no chance an dthis may lead to lower market later on when the real warm weather sets in. One of the redeeming features of the present situation is the continued heavy consumption and another one is the fact that stocks of cold storage eggs on spot are smaller than at this period a year ago. The domestic trade was fairly active today there being a steady demand for supplies for immediate requirements at unchanged prices. The receipts today were 905 cases, as compare dwith 1,186 for the same day last week and 1,727 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:
Selected new laid eggs....44c to 45c
New laid stock.....00c to 42c

What CP Means to the Farmer

C.P. means Paint of only one quality—the best. It contains only the purest Oils, the best Lead and Zinc, mixed in scientifically correct proportions, and ground to the finest degree.

The Farmer knows, by careful comparison of cost per gallon and length of time on the house, that C. P., CANADA PAINT, is unquestionably the most Economical and the Best Paint for anyone to use.

"HOMESTEAD LIQUID RED" is the paint for Barns and Silos. One gallon covers 300 square feet, two coats. Ask the C.P. agent in your town for any information required.

Write us for your copy of our new paint book, "What, When and How To Paint". Sent free upon request.

THE CANADA PAINT CO. LIMITED,

Makers of the famous "ELEPHANT BRAND" White Lead.

572 William Street, Montreal. 112 Sutherland Ave., Winnipeg.
2

Happy Farmer Tractor handling 3 bottom 14 inch plows backsetting Timothy Sod

Thirty-One Cents an Acre!

At Brandon the Happy Farmer demonstrated its ability to plow an acre in 45 minutes at a cost of only 31 cents worth of coal oil! Compare this with the cost of plowing an acre with your best team, with feed at high prices, and men's extra time to be counted in. Will it not pay you to use the

Happy Farmer Tractor

Model A—8-16 Horsepower. Model B—12-24 Horsepower.

Here is the ultimate tractor for efficiency and economy combined! It is famous for its simplicity—few parts to get out of order. Any intelligent farm lad can run it. It is heavy enough for the hardest plowing test and for heavy hauling—light enough to use with the drill. And it will go anywhere; it will plow right up to the fence with no unfinished corners. It will turn in its own space and not mire in soft spots.

Model B's engine is not just "adapted" to coal oil. It is designed *specially* for kerosene. It burns it perfectly—all of it—with no smoke nuisance and no carbon trouble. Model B will not only pull the plow and the binder, getting your work done early in critical times, but it will deliver 24 horsepower for all kinds of belt work at low up-keep cost.

If you prefer a lower power tractor, Model A supplies the need.

Write us for full particulars about price, delivery terms, etc. Literature free on request.

The Renfrew Machinery Co., Limited Head Office & Works **Renfrew, Ont.**

Eastern Branch, Sussex, N.B. Branches almost everywhere in Canada 202

No. 1 stock.....00c to 40c
No. 2 stock.....00c to 38c

The situation with regard to poultry is very firm in this country. Storage stocks are getting into very small compass, with some varieties already sold up. The demand continues good, and all live and fresh killed receipts are picked up at full prices on arrival. Fowl and cocks form the bulk of receipts and a few broilers and spring ducks are arriving. The demand for poultry has been unprecedented, and dealers report they expect all storage stocks to be cleand up by August 1st. Supplies of live poultry on the United States markets were lighter, and the active demand in many instances strengthened prices. Frozen poultry is reported to be moving satisfactorily. Much deterioration is apparent in arrivals of ice-packed, and these have moved at low and irregular prices.

There continues to be a steady demand for maple sugar for export to the United States, and further sales were made at 23c to 23½c per lb. f.o.b. country points, while on spot sales in a jobbing way were made at 24c to 24½c.

ST. JOHN

Veal—11c to 13c.
Beef—(Western) 21c to 25c.
Beef—(Country) 13c to 19c.
Lamb—$10.00 to $12.00 carcass.
Mutton—22c. to 25c.
Potatoes—$2.50 to $2.75 per barrel.
Oats—$1.10 to $1.15 per bushel.
Bran—Car lots (bgs.) $48.00 to $49.00.
Middlings—Small lots $49.50 to $50.00.
Chickens—45c lb.
Fowl—$2.25 to $2.50.
Butter, Tub—40c to 44c.
Butter, Roll—42c to 44c.
Eggs—Case, 34c to 35c.
Eggs—Fresh, 38c.

80 Years of Knowing How

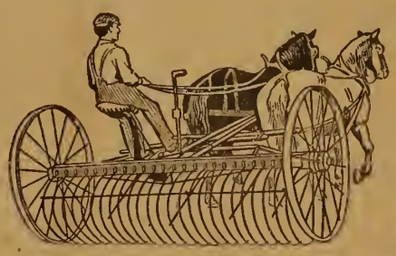
Tried, Proven and Popular Everywhere

THE FROST & WOOD MOWER CUTS ANY CROP

What you must have from your mower is dependable service—it must be ready to cut any kind of a crop, no matter how heavy or tangled—and it must be ready for work when the hay is ready to cut. Just use a little judgment in the selection of your mower—don't be afraid to be influenced by the example of thousands of successful farmers—make your choice a Frost & Wood and you will always have that comfortable feeling that your hay crop is safe, if a handy, easy-to-drive, light draft, dependable mower has anything to do with it.

The superior mechanical features of the Frost & Wood mower, the "internal drive gear," the special cutter bar, the improved knife guards, the modern roller-bearings, the always-cutting knives, carbon-steel construction, etc., are too numerous to deal with here. Get our "Hay Making Equipment" circular.

Frost & Wood "Tiger" Automatic Dump Rake



An all-steel implement, weather-proof and ready for the hardest kind of work year after year. The axle is immensely strong, is always revolving, so sagging in the centre is unknown with this Rake. The wheels are high, giving ample clearance; the teeth are the highest quality steel, carefully tempered and tested so they last for years. The Automatic Dump feature is worked by a small foot trip, the teeth coming up quickly and easily to dump the windrow. Light draft, good work and many years of it, are built into this Rake.

Ask the nearest Frost & Wood agent, or write our nearest branch for a copy of the Frost & Wood Folder, "Efficient Equipment Makes Hay-making a Pleasure."

THE FROST & WOOD CO., LIMITED,

Truro, N. S. ST. JOHN, N. B. Charlottetown, P. E. I.

MARITIME WOVEN WIRE FENCING

The Fencing That Does Not Bend or Break

ALL fences manufactured by the New Brunswick Wire Fence Co. Ltd. are made by the most skilled labor and of the very finest materials.

The new slide locks are outstanding features in this fence. Every other device used in this fence to prevent side slipping or up and down movement has been thoroughly tested and is guaranteed to give satisfaction.

Every yard of fencing shipped by us is thoroughly tested before leaving the factory. Our fences are not painted, but are galvanized.

We also can supply you with steel frame gates, panel fencing, etc.

Our fencing is sold by dealers in nearly every section of the Maritime Provinces. If there is no dealer in your locality write direct to

THE NEW BRUNSWICK WIRE FENCE CO.,

MONCTON, N. B.

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale

G. C. Cossar, Prop. J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls, ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. S. Bloomfield Farm

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm

OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Shorthorn Cattle !

High grade registered stock for sale.

J. E. HETHERINGTON,
CODY'S, - - - N. B.

GUERNSEY BULLS!

I offer for immediate sale, the Guernsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

FOR SALE

Best English Blue Orpingtons, beautiful rich blue birds, three dollars fifteen eggs ($3.00). Handsome Buttercups, prize matings, fine birds, $2.00 fifteen.

SARAH E. MOSES SMITH,
WOODWARDS COVE, - - N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

For Milk, Butter, Cheese, Veal, Holstein Cows stand supreme. If you try just one animal you will very soon want more. Write the

Holstein-Friesian Association
W. A. Clemons, Sec'y, St. George, Ont.

FOR SALE !

America's greatest winning marvelous egg producing (300 strain), Fawn and White Indian Runner Ducks. The breed you'll eventually adopt. Lay more eggs than poultry and eat less feed. Large snow white fertile eggs $1.50 per setting. Safe arrival guaranteed. Order now.

LORNE MURRAY, Harrow, Ont.

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

JERSEYS

Young Bull, solid color, dropped Sept. 1st, 17 Out of R.O.P. dam and by a noted sire—combining the blood of Golden Lad, Tormentor and Flying Fox.

SHORTHORN:—

2 Young Bulls—One dropped Jan. 22, 1918, of the purely milking type, out of a great milking dam and by a Champion sire in his class.

The other dropped April 2, 1918. Splendid specimens of beef type. Out of very large and blocky dam and heavy sire.

Both these calves are mostly red in color and in show condition.

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

Maple Green Farm Holsteins

Just now we are offering some fresh calved cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. butter in 7 days.

Herd sires in service. "Maple Grove Mercena Mercedes," No. 11727, the sire of our 26.54 lb. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter brother to our 25.05 lb. Jr 3 year old.

For particulars write

R. L. HICKS
Dalhousie Jct., - - N. B.

ROSEWARNE
S.C. White Leghorns

I am now booking orders for baby chicks and hatching eggs from my well known bred-to-lay strain. Chicks will be very scarce this spring, and there will be a wild scramble later on for supplies, so get your order in early and pick your date.

My cockerels and pullets, out of same matings as day-old chicks were sold from last season, swept the board at Halifax.

Send for prices and mating list.

ERNEST CRAZE
Port Williams, -- - N. S.

GLENRANE STOCK FARM

We are offering some very fine pure bred registered calves from 2 weeks to 8 months old These calves are sired by "Homestead Hengerweld Rooker" ¾ brother to a 26 lb. jr. 3 yr. old. They will be sold reasonably if taken at once. We also have several litters of very fine York pigs.

ROBERT C. HICKS,
West Bathurst, - - - N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

BUTTER PARCHMENT
Maritime Farmer Office

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st, 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown, with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows: and one ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, Hammond River, N. B.
HOLSTEIN CATTLE AND YORKSHIRE SWINE
WM. S. HARDING, PROP.

We rae all sold out of last years crop of calves. We are now offering some young bull calves sired by Sir Foforit Schuiling. Also a fine litter of young Yorkshire pigs.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple of bull calves fit to head the best herds in the provinces. Come and see them. We would be Pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

Registered Jersey Heifer

We offer for sale the registered Jersey Heifer, "Pride of Rose Bank," 3 years old, milking sired by Foxhall's St. John O'Dreamwold, whose dam gave over 10,000 lbs. milk in a year. Also Peerless Incubator. Barred Rock and White Leghorn Cocks and Cockerels, which would exchange for Barred Rock Hens.

ORCHARD HILL FARM
Brown's Flats - N. B.

SPRINGVALE AYRSHIRES!

Our present offering is four bull calves eight to twelve months old all from heavy milking dams. One each from Rosalind and Nita, each a prize winner in the dairy tests Amherst F. S Show over all breeds and grades.

Inspection invited.

FRED S. BLACK & SONS
AMHERST, N. S.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on. as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—One Holstein Heifer Calf, 3 months old; one Holstein Bull, one year old. —ARTHUR E. FERGUSON, West Bathurst, N. B.

FOR SALE—Four pure bred 2-yeer-old Guernsey heifers. Calve in June. Sired by a grandson, Dally Bloom. Also five young hulls.—T. D. BLAIKIE, Great Village, N. S.

FOR SALE—Registered Ayrshire hull, No. 48032. Dam 31884 C.R.R. Also several registered hull calves.—E. CHADDECOTT, Monkham's Farm, West Merigornish, Pictou Co., N. S.

EGGS FOR HATCHING from cholce stock, Houdans, Whlte Wyandottes and Rose Comb Brown Leghorns. Eggs $1.50 per setting. C. C. Sweeny, Lunenburg, N. B. Box 413.

LADIES WANTED—TO DO PLAIN and llght sewlng at home; whoel or spare time; good pay; work sent any distance. Charges paid. Send stamp for particulars. National Manufacturing Company, Montreal.

$20.00 WEEKLY, showing samples for Large Grocery Corporation, all goods sold at Factory prices to consumers, granulated sugar 6½c. Pure lard 5 pound pail $1.00, Sunlight, Gold or Surprise Soap 7 for 25c. Everything at cut-rates. Men wanted everywhere. Sample case free.—THE CONSUMERS' ASSOCIATION, Windsor, Ontario.

Percheron Stallion

Two-year-old stallion, pure bred and registered. A fine big boned promising young fellow. Sired by H. C. Jewett's "Gresham," who was never beaten as show animal in the Maritime Provinces.

ALBERT FLEMMING,

Truro, - - - N. S.

FOR SALE

Pure bred registered Percheron stallion, rising five years old. He is a first-class individual, a sure stock getter and will stand inspection anywhere. A bargain if taken at once.

A. S. HINGLEY,

Prince Str. House, Truro, N. S.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

McINTYRE BROS.

SUSSEX, - - N. B.

Eggs Half Price !

For the halance of the season I will sell eggs from my Barred Rocks, White Wyandottes, S. C. R. I. Reds and S. C. White Leghorns at $1.50 per 15. Good hatch guaranteed. Stock for sale at hargain prices. Write for particulars.

H. M. McMONAGLE,

Fredericton, : : N. B.

Advertise in the FARMER

Mahone Bay, N. S., 1918.

Mr. R. U. A. Landsman,
Prosper Hill.

Dear sir:—

Answering your valued inquiry for information re potato spraying outfit, beg to say that the pump is all brass, for the reason that the liquid will rust the inside of anay pump having an iron air chamber or iron pipes touching the spray. This rust, breaking loose, pumps into nozzle and clogs them. The piston of the pump is packed with a special fibre packing, made in such a way that it can be kept tight for years and new packings cost but little. The relief valve at the base of the air charmber permits pumping the liquid back into the cask, thus with the agitator and the returned liquid the mixture is quickly brought to a uniform strength. This valve will also drain the pump when you are through spraying.

The four row potato spraying attachment has a strongly built iron frame. The mixture is conducted to the nozzles through hose and brass pipes. The spray boom can be folded for passing through a gateway, or packing away when not in use. The nozzles can be adjusted for width of row and instantly for height and angle of spray. Four nozzles follow the tops of the rows and six intermediate nozzles spray the sides of the vines. The stop cock is just at the hand of the opeartor so that the spray can be shut off instantly. This apparatus can be attached to any cart or wagon, and one man can operate the sprayer as well as drive. This attachment can be used with any pump of sufficient capcity. These outfits have been known to run for several seasons without the nozzle once clogging. The straining hopper with brass wire cloth tacked in on an angle cleans the liquid when it is upt into the cask. The buttons permit of the quick removal of the pump from the cask.

The tree spraying attachment of hose, bamboo rod, double nozzle, etc., makes this sprayer into an orchard outfit. With these fine features and many others you see they are well named the "Perfect" spray pumps.

Trusting to be favored with your valued order.

Yours very truly,
R. B. WESTHAVER.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must he paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B.

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archibald, Truro, N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C. A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Newburn Hill Stock Farm

Our present offering is one pure bred Shorthorn Bull, 11 months of age, also a few Heifers from one to three years of age. All of good milking qualities.

Beef, Hay and Potatoes in car lots.
Choice Cultivated Strawberries a specialty

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
UPPER SACKVILLE, N. B.

FOR SALE!

Present offering, one Bull Calf.

P. R. L. FAIRWEATHER,

Rothesay - - - N. B.

FARMS FOR SALE !

1. Desirable farm for sale, situated at Lower Gagetown, N. B., containing 100 acres or thereby, suitable for growing all kinds of crops; there is a splendid orchard on the property, containing about 500 apple trees of good commercial varieties.

The farm buildings are commodious and exceptionally good and there is ample water supply. Public wharf about one-half mile distant and railway runs through the property.

2. Farm with suitable house and buildings, situated about 3 1-2 miles from Gagetown, extending to about three hundred acres, about one hundred of which is good cropping land, the balance containing a large quantity of valuable pulp and firewood.

For further particulars apply to

JOHN MIEKLEJOHN, Agent

Crosser Farms, - Lower Gagetown, N. B.

FOR SALE !

In Shorthorns we have to offer a number of roans, reds and whites in both males and females, from young calves up. It would pay those wishing to purchase to come and see our stock before doing otherwise.

Our spring litters of Berkshires are all sold. Are expecting several summer and fall litters. Parties wishing to purchase please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

Champion Registered Ayrshire Bull For Sale!

18 months old. Bred in the purple. Also one 10 months old. For R. O. P. records of dams and further particulars apply to

ARTHUR S. DENNIS,
"Willow Farm"

TELEPHONE 13-6 STEWIACKE, N. S.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY

Shubenacadie - - - N. S.

QUALITY BRAND

Rabbitry and Poultry Yards

Amherst, Nova Scotia

E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair..$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The ahove prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each.
D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain, for hatching.....$2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching.....$4.00 per 15

We Guarantee Safe Delivery. Terms Cash with Order

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,

New Mines - - - N. S.

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,

AMHERST, - - - N. S.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,

Truro, - - Nova Scotia

EGGS FOR HATCHING !

Breed Standard bred poultry and more of it. Eggs or stock from every popular variety can be had through our Association.

Eggs from all heavy breeds such as Bramahs, Plymouth Rocks, Wyandottes, etc., $2.00 for 15 eggs.

Eggs from the lighter breeds such as Leghorns, Minorcas and Black Spanish, etc., $1.50 for 15 eggs.

Write us your Poultry wants.

Cumberland Co. Poultry & Pet Stock Association

E. F. McKIM, Secretary

Amherst - - N. S.

WOODMEN

Wanted by Crown Land Department, experienced woodsmen to act as permanent Forest Rangers in Forest Service. Write for application forms and particulars to

T. G. LOGGIE.
Deputy Minister.

Crown Land Office,
Fredericton, N. B.
May 27th, 1918.

FRUIT PACKAGES

The fruit season is again drawing near, how about your boxes and crates for the coming season To pack and ship to the best markets, you require the best standard packages, which can be had by placing yopr orders early with the

Hantsport Fruit Basket Co'y.

HANTSPORT, N. S.

Cabbage Plants

OF all leading early and late varieties 45c per hundred, mail prepaid. $2.50 per thousand, express collect. Also cauliflower, brussels sprouts, celery, onion and Tomato plants. Ask for price list.

HEROLD'S FARMS, Fruitland, Ont.
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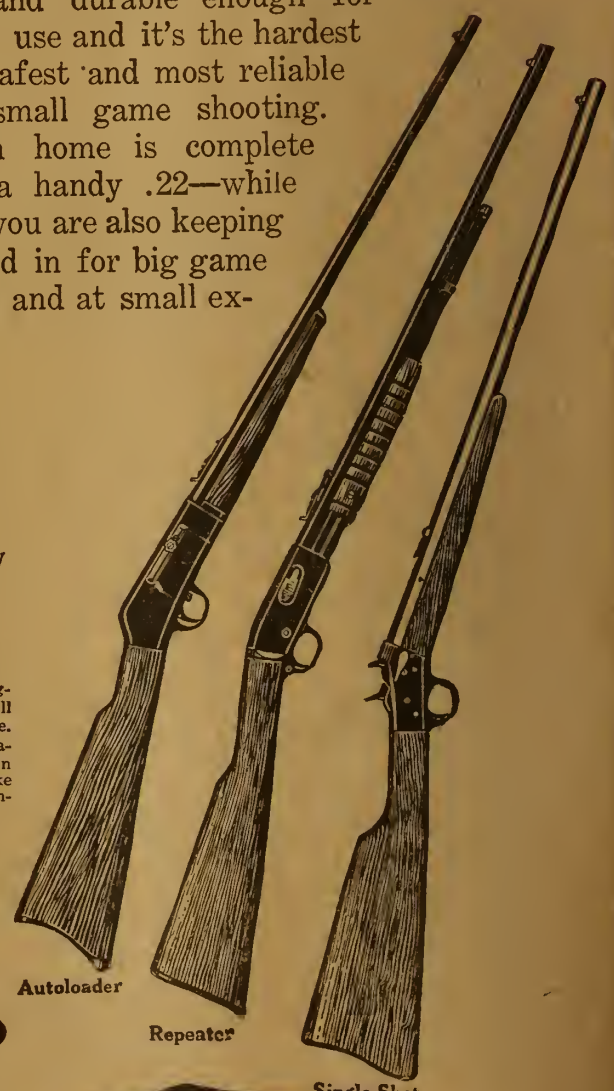
REMINGTON UMC
TRADE MARK

Make him a good shot—

Teach your boy to shoot with a real manly arm—a Remington U.M.C. .22 and get him U.M.C. ammunition. See him become self-reliant, manly—rightly proud of his shooting, as his scores improve.

The Remington U.M.C. .22 Rifle is rugged and durable enough for the boy's use and it's the hardest hitting, safest and most reliable for all small game shooting. No farm home is complete without a handy .22—while using it you are also keeping your hand in for big game shooting, and at small expense.



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Repeater

Single Shot

Three Remington U.M.C. .22's—all are beauties

The Remington .22's are distinguished for clean, graceful lines, safety features, facility of take-down and accuracy of fire. Here they are:

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The king of all 22's. Gives you 15 fast, smashing shots as quick as you want to press the trigger. Not the slightest disturbance of the aim. Weighs only 5½ lbs. The solid breech—a feature of all Remington U.M.C. Arms—is a wall of steel between the shooter's face and the firing chamber. Hammerless, simple and very accurate. Nothing to touch *this* shooting.

Remington U.M.C. Repeater

A beautiful weapon—operates by a smooth-working slide action; with practice you can stream the 15 shots with lightning speed. Shoots .22 short, .22 long, and .22 long rifle, mixed if you like, and they never clog or jam. Hammerless—nothing projecting to catch in clothing, etc. Side ejection. Made of highest grade steel—accurate, rugged, perfectly finished.

—and the Single Shot

An inexpensive but strongly built weapon that will give years of good service. Solid breech. Safety features, very acccurate in shooting because we make it as carefully as our highest price weapons.

Remington U.M.C.—means the best in arms and ammunition

For a big game rifle—see the wonderful Remington 5-shot Autoloader or the 6-shot Repeater. Cartridges—we make over 450 kinds. In shot guns, the Remington "Pump Gun" knows no equal. In shot shells—try the Wetproof, steel-lined Arrow and Nitro Club—very fast. New Club is the best black powder shell.

REMINGTON U.M.C. OF CANADA, LIMITED

WINDSOR, ONT.

These Cartridges are carefully tested in all Arms adapted to this size. They are specially adapted for fine gallery and target shooting. Also for sporting purposes
See Guarantee on bottom of box
22 LONG R.F.
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UMC
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LESMOK POWDER

These Cartridges are carefully tested in all arms adapted to this size They are specially adapted to fine target shooting up to 200 yards in rifles with long chambers
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College of Agriculture
University of Illinois

The
MARITIME FARMER
AND CO-OPERATIVE DAIRYMAN

REGISTERED TRADEMARK

Published Twice-a-month in the Interests of the Farmers of the Maritime Provinces of Canada

Vol. 24 SUSSEX, N. B., JUNE 25, 1918 No. 18

Agricultural Reading Room
College of Agriculture
E. Davenport, Director
Urbana Ill.

June Air In January

Most any furnace will produce a dry heat--the kind used to dry lumber in a kiln.

But that kind of heat will ruin the health of your family and destroy your furniture.

What month is the balmiest, healthiest, sweetest, most delightful of all the year?

June of course.

The Sunshine Furnace has been designed, developed and perfected to give to your home in January the same quality of air that you breathe out of doors in June.

The Sunshine Furnace by warming fresh air and charging it with the necessary exact degree of moisture, not only warms but ventilates your home with pure, soft, healthful air every moment of the day.

Above the fuel door of the Sunshine Furnace is a water pan designed with scientific exactness to vaporize into the warm air the precise quantity of moisture necessary to the health and comfort of your family.

In the Sunshine heated home there are no dry, hacking throats, no burning or wrinkling skins, no dust or gas—only pure, humid, balmy, healthful warm air.

Engineering Service Free McClary's own heating engineers are at your service when you buy a Sunshine Furnace, to give you free expert advice on your home-heating requirements. Write to the nearest McClary Branch and ask for particulars about this service. A booklet, "Comfort in the Home," makes clear all the things you want to know about furnaces, and it is sent free on request.

McClary's Sunshine Furnace

London, St. John, N. B. Toronto, Calgary Montreal, Hamilton Winnipeg, Edmonton Vancouver, Saskatoon.

STOMACH WORMS IN SHEEP

The stomach worm is the parasite which does the most damage in the American stocks but it may be successfully combated if the flock receives proper care and management. Many cases of "bad luck" with sheep are due to a combination of improper feeding and stomach worms. We all know that when an animal is not in a well-nourished condition it is more susecptible to attacks made by parasites and diseases, hence, we see why the man who does not keep his sheep in a thrifty condition is not going to be overly successful.

It is easy to detect a member of the flock that is infested with stomach worms. The unfortunate animal looks weak and dull, lets its head hang, hangs back from the rest of the flock, becomes thin in flesh, and oftentimes scours. Its fleece becomes harsh and dry and hte skin becomes pale.

Stomach worms cause the principal oss in the case of lambs. They are found in the fourth or true stomach. These worms are of a reddish color and are from ½ to one inche in length and are about as thick as a hair. Older sheep are not free from these pests an dusally are harbors of these worms. Full grown sheep may be heavily infested and yet show no marked symptoms.

The worms laden with microscopic eggs pass out in the feces from the older sheep and are scattered about the pasture. If the temperature is below 40 degrees the eggs will remain dormant, but will retain their vitality ofr two or three months. If the tem perature is above 40 degrees, the eggs hatch out in from a few hours to two weeks.

The young worm feeds upon the organic matter in the manure until nearly 1-30th inch in length. It then crawls up on a blade of grass, if there is sufficient moisture, and the temperature is above 40 degrees. At this stage the worms will stand freezing and drying for some time, and have been known to live six months at a temperature above 70 degrees. It is safe to say that a pasture wihch has had no sheep on it for ayear will be practically free from the parasites. At the Ohio experiment station a group of lambs fed all summer in a barn were kept free from parasites, while another lot turned out to pasture was badly infested. This, together with other similar results, proves that lambs get these parasites on pasture.

Methods of Prevention

As the lambs become infested from the older sheep and infected pastures, it is essential that great care be taken to remove the source of infection. Thus it is essential that we rotate our pastures as much as possible, and so arrange it that the lambs do not run on pastures where it is possible that the young worms have reached the infectious stage. If possible the sheep should be changed onto a fresh pasture every two or htree weeks during the months of June, July, August and September. Annual forag ecrops, such as rape, are especially desirable to afford this rotation of pastures.

There are numerous worm powders and medicated salts upon the market and some of these have merit. Some flock masters think that feeding tobacco helps prevent parasites. Some keep before their flock a mixture of wood ashes and salt sprinkled over with turpentine. If the lambs have been so handled that they are free from worms when weaned from the ewes and put on fresh pasture, there is not much danger of infection ,especially if pure water is provided for them to drink.

Among the most common remedies are gasoline, turpentine, benzine and coal tar cresote. Lambs that are to be treated should be separated from the remainder of the flock the evening before and placed in a building or dry lot where they will not receive anything to eat or drink. This precaution should be taken in order that the stomachs will be empty when the drench is given.

Size of Dose for Lambs

Practically the same amount of gasoline, benzine or turpentine is recommended. Following is dose for one lamb:

5 ounces cow's milk.
1 tablespoonful gasoline.
1 tablespoonful raw linseed oil.

For older sheep the amount of gasoline may be increased to 1½ tablespoonfuls, but the amount of milk and linseed oil would be the same The dose should be mixed separately for each lamb and administered on three successive mornings. A small-necked bottle is best for drenching, and great care should be exercised to prevent the liquid from reaching the lungs.

Experiments have shown that there is less danger of reaching the lungs and more certainty of reaching the fouth tomach when the sheep is kept in a standing position with nose elevated no higher than the eyes.

After giving these remedies we should not forget the fact that it is absolutelys esential that we provide pasture free from infection for the young lambs and get rid of infected sheep and pasture as rapidly as possible.—Prof. H. H. Kildee, Minnesota College of Agriculture.

Every Farmer Needs a Ford

THE Motor Car is a greater convenience to the average farmer than the telephone, the rural mail or even the grain binder.

The binder which is considered as a very useful implement is rarely used more than a few days during the entire year. The rest of the time it stands idle, taking up space, while the automobile is available for use throughout all seasons, and both day and night.

It is ever ready to run down the lane to the back field or the pasture with a parcel or a message, or take you and your family to town for shopping purposes—or on an errand to the neighbors.

The motor car is called upon whenever anything is wanted in a hurry. It is the most useful implement or convenience for the farm. It helps you conserve your energies and time for productive work and enables you and your family to accomplish more with less energy. You surely feel the need of a Ford. Why not order one today?

All prices subject to war tax charges, except trucks and chassis

Ford
THE UNIVERSAL CAR

Chassis	$535
Runabout	575
Touring	595
Coupe	770
Sedan	970
One-Ton Truck	750

F. O. B. Ford, Ont.

Ford Motor Company of Canada,
Limited
Ford - - Ontario

FILE VS. GRIND STONE

One can't sharpen a hoe on a grindstone, awkward to hold and trembles. I always file. Fasten the shank in a vise, blade up, file on the inside and the ends as well. Always keep the corners square, you can then hook out a weed from a hill or plant without stooping. There is a pleasure in having a tool work easily. Your axe must balance and so should your hoe. Select one that is light, thin and well tempered, with the proper "hang" and nicely balanced. If you hoe all day file in the morning and at noon. It's only a few minutes if you take the "stitch in time." If you haven't a steel screw and vise go right away and get one. I would as soon think of chopping witha dull axe (so the wood would burn better) as to hoe with a dull hoe so as to pull the weeds out. We can speed up a little when every tool is sharp. We must to produce what we have to—"our bit."

If you are going to sell your surplus cockerels at six months of age, don't caponize, for the cockerels will make greater growth to that age and at cheaper cost. Beyond six months of age capons will do better.—[Prof. Lester E. Card.

FINANCIAL ASSISTANCE TO PROSPECTIVE SHEEP BREEDERS

Editor the Maritime Farmer:

The war has created an unusual demand for wool and meats and there is every prospect for a contnuance during many years of firm prices on all livestock and their products. This Province is eminently adapted for sheep raising and the result of the grading of wool this year proves beyond a doubt that the quality is very high.

The essential foods for sheep are grown within the Province and instead of having about 100,000 sheep there should at least be 500,000. The time is at hand when we must put forth an effort to produce more of our requirements or at least have more animal products to sell. We have the climate, food, also market for the finished product, but we lack the stock.

At the last session of the New Brunswick Provincial Legislature the Minister of Agriculture asked for and was given authority to purchase sheep for breeding purposes and to resell same to bona fide farmers at cost plus freight and incidental expenses. Arrangments for credit, where required, have been made with all chartered banks.

New Brunswick farmers who wish to purchase sheep for breeding purposes should apply to the Manager of their Bank before August 31st, 1918. The Manager will have the necessary forms on hand which must be filled out when an order is given.

A deposit of $3.00 per head on ewes and $10.00 per head on pure bred rams must be made when the order is placed with the Banker, when the sheep are delivered, where credit is arranged, an additional amount, sufficient to make the total cash paid equal to one-third the gross purchase price of the sheep, and a note for one year, will be required for the balance.

All orders must be placed on or before August 31st, in order that we may know how many to secure. Lambs will be purchased to a very large extent, because breeding ewes that are worth purchasing are not offered for sale to any large extent. Lambs will cost aproximately $13 to $15 per head and good rams about $40. No definite price can be set.

Strong, vigorous lambs will be selected and distribution will be made this fall as early as possible.

Competent men will select the sheep in all instances.

It is anticipated that many will pay cash, but for those who cannot, the Government has been able to arrange with the Banks whereby one year's credit can be obtained for two-thirds the gross purchase price of the sheep.

The acceptance of any order for sheep when a loan is applied for, rests altogether with the Manager of the Bank. All orders must be placed through the Banks.

This is an opportunity for many to commence in the sheep industry. Wool is, and will be for some time, a good price; mutton will likely remain high.

W. R. REEK,
Secretary for Agriculture.

FARM KEPT IN SLICK CONDITION

If the practice of cleaning up about the farm were as rigidly followed by the average farmer at stated intervals as the practice of house cleaninw is followed by his wife on scedule time, the general appearance of the farm would be greatly improved Of course, it takes a little time, but the satisfaction taken in the better appearance of the farm will prove sufficient reward for ahe time and effort expended. There are in nearly every neighborhood a few farmers to whom the neighbors refer as "slick" farmers, meaning that they keep their farms in a slick condition. Of course, this requires as much time and effort on their part as would be the case with the average man, but somehow this class of farmers are almost universally a prosperous class, while many who contend that they cannot afford the time to do the little things which will put the farm in presentable conditionns are not, which fact discredits the arguments of the latter class from a business standpoint. But, really, after one acquires the habit of keping the farm cleaned up, it requires little, if any additional expenditure of effort to keep it in that conditino. The habit however, can only be acquired with effort and the first thing that is necessary to that end is to have a general cleaning up at stated times, after the manner in which the industrious housewife does her cleaning.

The farmer who is careless of appearances will be surprised to note the amount of rubbish that has accumulated about his buildings, the number of things left in the wrong place, and the accumulation of odd jobs, which need doing to put things to rights and give the farm the neat and presentable appearance that is always admired by the stranger who journeys through a rural community.

Of course, there are extremes in everyahing, and it may not be profitable to go to the extreme in this direction, yet "straws show which way the wind blows," and the man who is habitually careless in this regard is apt to be found habitually careless in other details of good farming.—W. F. PURDUE.

USE FOR OLD IRON

Farmers who are going to do much concrete construction work should buy up all the old iron they can find. It makes a good reinforcement. Such articles as old buggies, wagon tires, shafting of all kinds, iron rods, etc., are usually sold on the first bid, and sometimes they aren ot even offered for sale. There is a good bit of junk around the average farm that might be disposed of for concrete reinforcing.

A bumper crop may mean a loss if your binder cannot handle it

At the same time your binder must be able to handle a light crop successfully—a thing some binders fail to do. The

FROST & WOOD BINDER

has practically grown up, in the last 80 years, with Canadian Agriculture and has been improved and tested until to-day it represents the ideal Binder for Canadian crops.

The crop won't wait—your binder must be ready

The Canadian farmer demands and must have a Binder that will cut any kind of crop—heavy, thin, tangled or straight—it must be light draft, easily handled and it must last for years with but little repair service. We have no hesitation in saying that the Frost & Wood Binder will live up to the highest expectations in all these respects. We use light, high carbon steel and put high-class roller bearings at every friction point so as to get light draft and strength. The reel can be moved by an easy, convenient lever to bring any kind of grain, tangled or not, to the cutter bar and once there Frost & Wood force feed elevators can be absolutely relied upon to deliver it to the binder, and the sure tying knotter. By another easy adjustment you can tie any size sheaf you want—and even the sheaf carrier is well thought out—lowering the sheaves gently and regularly to the ground so no grain is shelled. A Frost & Wood Binder is a guarantee that you'll get your crop in. Many are in use up to 20 years old, giving fine service.

This Binder question is a mighty important one. Be sure to read our illustrated Binder folder—ask our nearest agent or write our nearest Branch to-day.

THE FROST & WOOD CO., LIMITED,

Truro, N. S. ST. JOHN, N. B. Charlottetown, P. E. I.

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4 IN Slate Surfaced Asphalt SHINGLES

Also makers of
Waterproof "SOVEREIGN" Sheathing Felt

"RU-BER-OID" Wall & Ceiling Board

"STANCO" Canadian Ready Mixed Paints.

Artistic Economy for the Home Roof

THE cost of DURO, as compared to its only real competitor, slate, is very moderate. DURO Shingles are more artistic than Slates, are laid more easily and in less time.

One DURO Shingle takes the place of four old-style shingles, and gives better service.

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ALL fences manufactured by the New Brunswick Wire Fence Co. Ltd. are made by the most skilled labor and of the very finest materials.

The new slide locks are outstanding features in this fence. Every other device used in this fence to prevent side slipping or up and down movement has been thoroughly tested and is guaranteed to give satisfaction.

Every yard of fencing shipped by us is thoroughly tested before leaving the factory. Our fences are not painted, but are galvanized.

We also can supply you with steel frame gates, panel fencing, etc.

Our fencing is sold by dealers in nearly every section of the Maritime Provinces. If there is no dealer in your locality write direct to

THE NEW BRUNSWICK WIRE FENCE CO.,

MONCTON, N. B.

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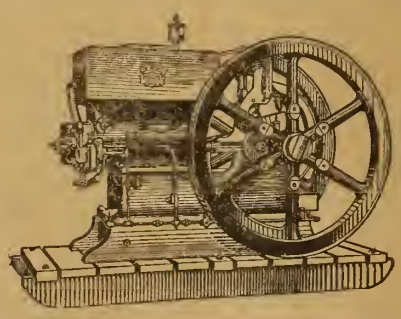
Stationary or Mounted

An Engine for Every Need

Kerosene Traction Engines



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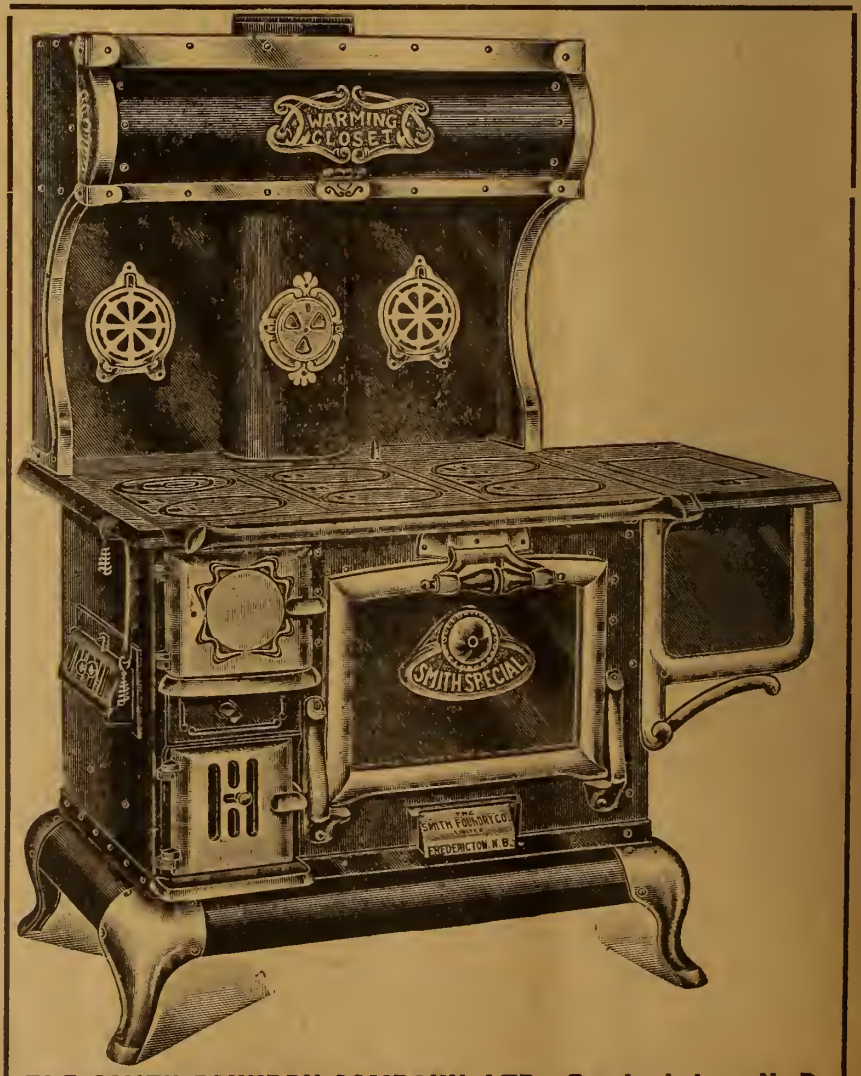

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SMITH BROTHERS, General Store, Sussex, N. B.

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AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 23. SUSSEX, NEW BRUNSWICK, JUNE 25, 1918. Number 18.

Feed Situation This Winter Most Acute

Supply of Wheat will not Permit Flour Mills to Operate This Summer--- Great Shortage in Feeds Looked For

Where are feeds for the feeding season of 1918-19 to be procured,

This is one of the most serious questions that live stock owners will have to face in 1918-19. It is a problem which is causing the agricultural departments of all the Canadian provinces no small concern and it is one that is being dealt with vigorously in Ontario by the givernment of that province.

Just here it might be well to give a few of the causes for the serious shortage of mill feeds, which threatens to turn topsy turvy the usual methods of stock feeding and interfere seriously with the average supply of middlings, shorts and bran.

First, there is the fact that the exportation of wheat for the overseas forces has left litttle grain in this country for the use of the flour mills. The supply, until the new crop is harvested will be negligible. How much of this will be available for grinding in Canada, depend altogether on the needs of the men at the front. They must and will be fed. And the fact that wheat can be handled so much more advantageously than flour, at a time when ocean tonnage is so serious a factor in the winning of the great war, gives wheat the call as an exportable article.

Second. The order that all flour in Canada shall be war standard, means that the by-products of wheat have been reduced about one third. This has removed middlings from the market and leaves only shorts and bran to supply the demand. Here again there is a big shortage to be met.

Third. The order in force for some weeks, which prohibited the shipment of shorts and bran from wheat ground west of the Great Lakes, to any other but points in the west, cut the eastern supply very seriously.

Fourth. In the summer of 1917 hundreds of cars of straight feeds were shipped from Canada to the United States, despite the serious outlook for Canadian stockmen and despite the protest of the Maritime Farmer to the then food conroller, Hon. W. J. Hanna. This leak had a very serious affect on the mill feed supply in 1918.

Fifth. The United States corn crop, the largest on record, was not available for Canadian consumption until a few weeks ago. Transportation difficulties interfered with Canada getting he rusual supply of corn and the result was that thousands of tons of corn products, usually fed to Canadian stock had to be replaced by mill feeds.

Sixth. The United States government prohibited the export of cotton seed meal, except under license, and permits to ship this important feed to Canada were issued with care.

Seventh. The encouragement of increased production in beef, pork and dairy products has led to a far greater demand for mill feeds.

Eighth. Wheat products were in 1918 the cheapest feeds available and the farmers naturally turned to them for sustenance for their stocks.

Ninth. Difficulties in transportation were so serious that it was found impossible to move supplies freely. Not only was the rolling stock of all railways in great demand for moving war supplies, but the unusually severe winter made it almost impossible to get freights of any kind through.

These and other conditions have resulted in a feed shortage that promises to be worse before it is better. How to overcome it is taxing the ingenuity of widely interested bodies.

In Ontario, the department of agriculture has decided to supply farmers with special feeds, which will be furnished through various mills. This question of feeds is so highly important that we publish herewith a letter sent out by the committee appointed by the Ontario government to look into the matter.

The letter is as follows:

Toronto, June 4th, 1918.

Dear Sir:

The organization of Resources Committee of the Province of Ontario has definitely ascertained that there is likely to be a shortage of concentrated cattle and hog feeds in the Province of Ontario in the late summer and fall of this year, and with a view of supplying this shortage and with a view also of releasing to some extent some of the farm grown grain fit for human consumption, which would otherwise be used for cattle and hog feeds, have arranged that a certain quantity of ingredients such as oil cake, cotton seed meal, gluten meal and corn, which can be made into a concentrated and balanced cattle and hog food, may be exported from the United States and imported in to Canada. This arrangement has been practically arranged during the writer's visit to Washington.

As a means of having these ingredients imported into Canada, mixed, stored and distributed, it has been suggested that the millers are the ones who could best undertake the work and thus assist in the work of the Committee in conserving the resources of this Province as a war measure. It is thought that it would not be a sound business proposition for anyone to undertake to purchase and distribute in the wholesale may which has suggested itself to the Committee, unless that person or Company could handle at least sufficient of the raw materials to make 100 cars of the finished foods. The formula proposed to be used are as follows:

Dairy Cattle Rations

Hominy feed or corn	20%
Corn or wheat bran	18%
Cotton seed meal	19.5%
Oil cake meal	19.5%
Gluten feed	14%
Dried beet pulp	9%

Swine Ration

Corn	46%
Middlings	35%
Oil Meal	11%
Tankage	8%

It is further proposed that each person undertaking to go into this work should enter into a formal contract with the Committee somewhat upon the lines of the enclosed draft contract, which is sent merely for your consideration and suggestions and not sent as a contract finally revised.

I would be glad if you could let me know by return mail if possible and if not, at your convenience, whether you would be interested in this matter, and if so whether you could make it convenient to attend a meeting of the Resources Cimmittee and the Millers in Toronto on the 13th day of June, 10 A. M. at my office in the Parliament Buildings, to discuss and make final arrangements for the carrying out of this project.

Yours faithfully,
C. F. BAILEY,
Chairman of the Food Sub-Committee
Agricultural Section of Organization of Resources.

The agreement under which feeds are to be supplied, reveals co-operation between the millers and the consumer. Ontario is not to be denied her necessary supply of mill feeds and the work of organizing for sufficient to meet the demands of the stockman, was started months ago. The agreement between the millers and the committee, representing the Ontario government is as follows:

MEMORANDUM OF AGREEMENT made day of June, 1918,

BETWEEN:

THE UNDERSIGNED PERSONS, INCORPORATIONS AND FIRMS, hereinafter called "The Millers"

Of the First Part

and

THE ORGANIZATION OF RESOURCES COMMITTEE herein represented by the Chairman of the Agricultural Section thereof, hereinafter called "The Committee.

Of the Second Part

WHEREAS the Committee is constituted by an Act of the Legislature of the Province of Ontario known as The Organization of Resources Act, being Chapter 4 of the Statutes of Ontario, 6 George V., as amended by Chapter 27 of the Statutes of Ontario, 6 George V.

AND WHEREAS it is deemed advisable by the Committee and arrangements have been made for the permitting of the export from the United States and the import into Canada of certain articles entering into the preparation of balanced feeds for cattle and hogs to take the place to some extent of the farm grown grain suitable for human consumption.

AND WHEREAS the Millers have consented to act as importers, manufacturers and distributors of the said feeds and to make the necessary financial arranagements in that behalf.

NOW THEREFORE THIS AGREEMENT WITNESSETH THAT FOR valuable consideration the parties hereto mutually covenant, promise and agree as follows:—

1.—The Millers shall

(a) Purchase through one central personal agent, to be appointed and paid by them, the various articles or ingredients entering into the preparation of the said feeds, according to the formulae hereinafter mentioned, to the best advantage and from sources to be designated by the Committee.

(b) Assemble the same at convenient warehouses, or places of storage and there mix or prepare the said feeds according to the said formulae ,and have the same ready for sale on or before the day of 1918.

(c) Store the same pending sale and delivery.

(d) Sell, ship and distribute the same only to such farmers' organizations or such other persons as shall be satisfactory to the Committee and approved by it.

(e) At all times maintain the standard and quality of the said foods according to the said formulae.

(f) Purchase on or before the day of 1918 quantities sufficient to produce at least the number of tons of the finished product set opposite to the name of each hereunder.

(g(If required use bags or other packages to be supplied by or through the said Committee for containing the said foods for shipment.

(h) Permit the Committee or any person or persons authorized by it in that behalf to inspect the mills, warehouses and other places of storage, the books, invoices and other documents of the Millers at all reasonable times for the purpose of ascertaining the terms of this contract being carried out.

(i) Furnish to the Committee monthly statements of the quantities purchased, sold or distributed by each of the Millers and the quantities on hand, whether prepared or otherwise.

(Continued on paeg 600)

Millers Say Use Special Feeds

Serious Shortage in Bran and Shorts Will Force Use of Other Feeds---Review of the Situation

In view of the impending scarcity of mill feeds and the great demand which will have to be met from some source, the Maritime Farmer has asked several mills to give their opinion on the situation. The Campbell Flour Mills, Toronto, has kindly given a review of conditions, which is published herewith;

Regarding future outlook for feed. The big trouble throughout the country at the present time is that all feeders are trying to get Bran and Shorts and will not take up with the prepared feeds. The situation is just this. We have not enough wheat in Canada to keep the mills running beyond July. We, ourselves, expect to close down one of our plants the first of July and during June we have only run to about one half of our capacity. This condition is general throughout the country. Added to this we are required to make 76% flour and in making such flour we take considerable of the product that went into Bran and Shorts previously, into the flour, so that the capacity of feed is considerably reduced. The feeder, therefore, cannot expect to get enough Bran and Shorts to keep him going and he must look to some other feed this Summer at least, and possibly next fall.

We make our feeds from products of Corn, Barley, Oats and Rye, with Cotton Seed Meal, Oil Cake Meal and other heavy protein feeds added. These feeds are not mill rubbish put up under a special name in order to clear the mill of its waste, but are made of good, sound material. They are all registered products and carry a guaranteed analysis.

Monarch Hog Feed for instance, is guaranteed to contain 15% protein and 4% fat. We could make the protein content a great deal higher, but for the inexperienced feeder it would not be safe to make it stronger than it is.

Monarch Dairy Feed has a guaranteed analysis of 20% protein and 4% fat and this feed, like the Monarch Hog Feed, is made for general use, not alone for the scientific feeder.

Monarch Calf Meal is a high grade substitute for whole milk and can be used satisfactorily with either skimmed milk or water. The guaranteed analysis of this is protein 20%; fat 7½%.

Sampson Feed is designed for the general purpose of the farmer, that is, for feeding either cattle or hogs. In Monarch Hog Feed we use Digester Tankage and of course, this is not suitable for cattle feeding, so we make this Sampson Feed for general purposes.

There is no doubt that very shortly the farmers will have to depend almost altoether on such feeds as we have enumerated above, until the new crop comes in, in the Fall.

In Ontario the Department of Agriculture is cooperating with the mills in an endeavour to put out a standard guaranteed analysis feed for both cattle and hogs, the formula of which will be very much similar to the feeds we have described above. The mere fact that the Department of Agriculture up here in Ontario, where there are so many mills, appreciates the fact that Bran and Shorts are not going to be available would point to the fact that the farmers generally have to depend on some other feeds besides these for their feeding this Summer.

Cotton Seed Meal Situation

Prices will be Fixed by United States Government and Exports Regulated---Orders From Societies Should be Prompt---Selling Conditions

The acute situation of the mill feed market should make Cotton Seed meal a most desirable feed for 1918-19. Last year the Maritime Farmer purchased a number of cars of this high grade feed and delivered it in the Maritime Provinces for $49.50 per ton, 38½ per cent . protein. It was the best Cotton Seed Meal ever brought to this part of Canada. That at least was the decision of those who bought it. The supply was obtained from a United States mill, which was recommended by the United States Department of Agriculture. They guarantee quantity and quality delivered. This meal returns to the feeder about $15.00 worth of ammonia. Taking this into consideration, the feed is an economical one and should be largely used this winter. Some of the feed bought last year was held up by the railway congestion and was sold by order of the United States food controler. In order to avoid anything of this kind this year it is of prime importance that the orders be in early. They should be placed as near the first of August as possible. This feed is bought direct from the mill and there is no broker's commission on it. If your society is interested have your secretary make up the order at once.

These goods are sold in carload lots. The sales are conditional to the draft being paid on demand draft, draft, shipping order and bill of lading attached. That is to say the bill must be paid when presented from the bank. This may mean a few days in advance of the arrival of the car, but in case it is lost, the railway becomes responsible for the loss. In ordering have the bank notify the Maritime Farmer that the draft will be paid on presentation, on the above terms.

The following letter is explanatory of the situation:

The Maritime Farmer,
Sussex, N .B.
Gentlemen:

The by-produts of cottonseed is now in the hands of the Government and the price for the coming season of 1918 has not been set and will not be fixed until about August 1st, as we have been instructed by the Government to make no trades and sell no produce for the new crop until that time, it will be impossible for us to tell you anything definite. However, we can say this, that if the Government will permit us to ship any products into your territory, we will be very glad indeed to co-operate with you but at the same time, please let it be understood that any products that we sell to you will have to be sold, demand draft, shippers order, Bill of Lading attached, and just as soon as we know anything definite, will immediately get in touch with you.

Fireweed as a Honey Plant

Fireweed, or Great Willow Herb (**Epilobium angustifolium**) has produced large crops of white honey of excellent quality in direrent parts of Canad, especially after bush fires in soil rich in humus or clay. In the North Country this plant secretes more nectar than alsike clover. It comes into flower later than clover, after the colonies have had plenty of time to build up strong, and the honey flow from it lasts for about seven weeks during the best part of the summer In the Gatineau Valley, Que., and in the Temiskaming and Kenora districts of Northern Ontario, the honey-flow from fireweed commences about the middle of July, reaches its height about the middle of August and lasts until stopped by frost at the end of August or beginning of September. On the Pacific Coast fireweed is in bloom during June and July. Unfortunately the high yields from fireweed in many places do not last for more than a few years. Other vegetables springing up gradually chokes the fireweed, and the plant does not get another chance to develop a heavy growth and many flowers until after another fire occurs. After a bush fire, the surviving root stocks from scattered plants of fireweed creep in all directions, and the following year they throw up tall stems bearing the showy rose-colored flowers which keep opening, those that winter being succeeded by a ring of flowers higher up the stem. Although the bowers produce seed freely which will germinate in early spring, the seedlings perish except on ground that remains moist and shaded. Experiments are being conducted by the Bee Division to discover means by which fireweed may be made a dependable source of honey year after year. A stand of fireweed is being maintained by occasional burning, but this method whatever may be learned from it, can hardly be recommended on account of the danger of fires spreading. The most promising method at present seems to be the development of systems of beekeeping whereby the apiary may be easily transported every few years from a locality that is failing to one that is coming into profit. Many of the best firewood locations are remote from civilization, but as the bees can be kept so as to need no attention in winter, this is not a serious drawback, but the risk of losing the apiary in a forest fire must be guarded against.

Fireweed is particularly plentiful in many places in British Columbia, especially at high altitudes where it flourishes independent of fires, but the weather conditions are not so favorable for honey production as in parts where the summer is drier, less cloudy and warmer. For a good production of fireweed, clear moderately warm days with cool nights appear to give the best results.

At present, vast quantities of nectar secreted by fireweed in Canada are lost for want of bees to gather it.

Success in Co-Operation

The Co-operative movement in Canada has made remarkable progress during the past decade. At its beginning co-operation among farmers was almost unknown, but today it is well organized in all the provincse and the farmers are thus able to make their influence felt—not only in the commercia world—but also in the political world.

At this stage in the progress of the movement it is opportune to emphasize some factors which have been found by experience to contribute to success in co-operative work.

1.—Competent Management.

Co-operation attempts larger things. It aims to dispose profitably of all the farmer's products, as well as to purchase for him all his supplies. It proposes to sell for him his hay, grain, vegetables, fruit and other farm products and to sell them at a profit over and above what he could obtain through the ordinary channels of sale; it proposes also to buy for him his fertilizer, feed, etc., cheaper than he can buy it through his dealer; and unless co-operation can do this for the tiller of the soil, it has largely failed to justify its existence. Now to fulfill all these expectations and they are quite reasonable, requires, as you can easily see, not only experience but business ability of a very high order. To buy and sell wholesale for the farmers as proposed with market conditions such as they are today, demands a management such as is often extremely difficult to obtain in every community where a Co-operative Associtaion is needed. But such a management must be found if co-operation is to be a success for there is no more common cause for dissatisfaction with co-operation than mismanagement. Hence in the choice of a manager the greatest care should be exercised. Of course, the big man will command the big salary, but there is no man who is fully qualified for his office but can earn his salary many times over in the course of the year, while the incompetent manager can lose as much, so that the high-priced man is the cheapest in the end.

2.—Unswerving Loyalty on the Part of the Members to Their Association

The Co-operative movement comes into early conflict with the dealer. In the organization he quickly recognizes his most formidable antagonist and he at once sets about destroying it or at least to so weaken it that it will not seriously interfere with his business.

As a rule the dealer begins by offering the farmer a little higher price for his produce than the Association offers or he will sell to him the supplies he needs at a better rate He can even afford to make a pretty large sacrifice for the time being, if thereby he can break up the Co-operative Society, for when its opposition is removed he can in a short time reimburse himself for any loss he may have sutaied in his effort to destroy his rival. The co-operator ought to remember that this Association is his best friend, that it seeks his own interests and that the Association cannot live unless he gives it hi wholehearted support.

3.—Sufficient Funds in the Treasury to Form a Good Working Capital

Every Co-operative Asociation is a business organization and if success is to be attained, must be governed by strictly business methods. It is possible to do business without any paid up capital, but it is not saafe, for if losses occur, there is no contingent fund upon which to draw, in which case a direct assessment must be made upon the members, a process which is both expenive and exceedingly unsatisfactory.

The truly business-like way is to start with a sufficient paid up capital to conduct the affairs of the Company without depending too largely on your credit. This may entail some hardship at the beginning, but will in the end save much in Bank interest and other inconveniences known only to those who do business solely on the credit system.

If, then, these contentions are true and the experience of the past ten years has proved them true again and again, other things being favorable, Co-operation is bound to be a success if there is first an efficient management which is backed up by a loyal membership who supply that management with sufficient funds to form a good working capital.—H. S. Shaw, Berwick. N. S.

No Time to Quit Dairying

Europe is Slaughtering Milch Cows for Meat and Future for Canadian Dairymen Looms Gigantic

It is usually quite hard to convince a man what is good for him when his face is set in the other direction. In the same way, it is not the easiest thing in the world to lead an industry along the road heading for ultimate, rather than immediate advantage.

This is how it is with the dairy industry in Canada at the present time. It has a grouch on—no end of a grouch. It is kicking every inch of the way and, naturally, is not gaining much momentum. This is a pity, for its own sake as well as the sake of the soncumer.

In plain English, the dairy farmer is bidding fair to miss the best opportunity ever presented to him. He is being penny wise and pound foolish by putting the brake on an industry which should be one of Canada's greatest after the war. The trouble is that he is not looking beyond today. He is meandering around in a circle and failing to see his problems in the spotuight of national economic advantage. It does not take much perspicacity to realize that the dairyman who helps his country now is going to help himself in the future, and in war time personal relations must be subservient to the national cause.

The dairy farmer has taken cold feet and the consuming public has got to help him warm them up. He raised the price of milk and immediately people jumped on him—very unreasonably too. He had a whole lot of problems to meet that Mrs Housewife knew nothing about. If she had she would no thave been so ready to blame him. There is this to remember—that since the beginning of the war the price of cows has gone up 50 per cent., feeds 75 per cent., and labor 75 per cent. During this period the increase in the price of milk has been under 30 per cent.; butter has advanced about 40 per cent and cheese 50 per cent.

As the price went up, consumption went down. The dairy farmer was discouraged. He was having the time of his life securing labor. Five years ago the cost of labor on a dairy farm ranged from $25 to $30 a month. Now it is anywhere from $35 to $60 and hard to get at that. And for some time the dairy farmer has been asking himself: Is it worth it?

He has not seen his way very clearly and he has been kicking so hard that he has not had much chance to progress. He sees a cloud hanging over the dairy industry and feels the lack of appreciation on the part of the consumer. If the sky were as clear as in 1914; if the Atlantic were as free of danger; if there were as much shipping space available now as before the war—all would be well He would go ahead. As it is he can only see the difficulties of export and feel the lack of response on the part of the public. What he is discounting altogether ic the fact that after the war the dairy industry of Canada may be fairly expected to assume gigantic proportions.

And why?

Because Europe today, in her dire need, is killing off her breeding animals. This is the kind of thing that all nature rebels against. In the final analysis, she exacts her toll for such wanton destruction—but then it has to be, when there are starving people clamoring for meat.

Not only that. In the past Britain has imported much of her butter from markets which are now cut off for various reasons—Russia, Denmark, Norway and Sweden, for instance. Her dairy imports from foreign countries have far exceeded those from her own possesions.

In future she will lean more on her colonies for dairy products. AND OF ALL HER COLONIES SHE WILL LEAN THE MOST ON CANADA!

This is one salient point for the dairy farmer to remember when he is facing odds.

Britain's sortage of butter due to the war is 209.148.784 pounds. Of this vast amount Canada only sold 7,121.568 pounds to the Motherland last year. The disproportion is striking.

It is true that there are more milch cow si nCanada today than there were in 1914 but the numbers are relatively small when we cmopare them with the figures for such diminutive countries as Denmark, and in deed, England itself In 1914 there were 2,673.286 milch cows in Canada; today there are approximately 3.500.000.

Canada has only about one-seventh the number of cows of the United States. She has fewer than Great Britain and Ireland; fewer than France and not many morethan Denmark. The French cow population has fallen off by 21 per cent. as a result of the war. The British cow population is still normal.

Why doesn't Canada increase the size of the milch cow herds? It is a certainty that this European shortage will create an overwhelming demand not only for dairy rpoducts but also for cattle. Something has to be done to replace the 28,000.000 head that Europe has been obliged to send to the shambles.

Even as things are, our hold on European markets is gradually strengthening where dairy products are concerned. The following table of exports goes to prove this:

	1913
Cheese	155,216.000 lbs.
Butter	828.623 lbs.
Condensed milk	335,845 lbs.

	1917
Cheese	180,733,426 lbs.
Butter	7,990,000 lbs.
Condensed Milk	15,858.000 lbs.

Hon. T. A. Crear, Minister of Agriculture, sees great possibilities for Quebec and Ontario capturing much of the dairy trade of Norway and Denmark; while the aMritime Provinces besides saring in the markets of the old land should be able to command an ever increasing trade with the Eastern States in butter and cheese he believes.—I. M. Ross, Educational Division, Canada Food Board.

HELPS FROM SMALL THINGS ON THE FARM

The great variety of work on a farm demands that in order to accomplish the greatest amount of benefit from farm service one must have many implements and tools adapted to the various phases o fwork that is to be done.

While most men deem it absolutely necessary to invest in the more elaborate and expensive things of a farm, at the same time there are many others that are comparatively inexpensive and yet if not absolutely necessary are essential to the best interets of the work of the farm. For instance, on what percentage of farms will one find a decent outfit of small working tools? On many there is scarcely a good fork to be found, and only old things with bent or broken tines, chacked handles and half worn out, or blunt points. One cannot do good work with such tools. Good forks and plenty of them should be the rule, at least one for every man on the farm, and one extra for cases of emergency. Not only of one kind, but there should be forks for all purposes, hay forks, manure forks, ensilage forks, and forks for any other special purpose. These should all be kept in good order. If one is broken it should be replaced at once so that in case of emergency there will always be a means of supply available without loss of time, which is frequently of greater value than the price of the fork.

Of shovels and spades and hoes there should be a reasonable supply at least one of each kind and always in good condition, cleaned after use, wiped dry, oiled, and hung up in their regular place so that there will be no hunting when they are next needed.

On many farms there is no pick or crow bar. These are inexpensive articles, very useful now and again, indispensable for many purposes and all farms should include them in their working outlt.

Most farms should include a reasonable kit of carpenter's tools; at least, two good saws, a brace, set of bits, chisels, a large and small screw driver, plane, drawing knife, hammer, asortment of nails, tacks, screws, rivets, bolts, leather punches, cold chisel, pipe wrench, files and many other articles which one needs very often for making repairs or building new homemade articles.

Some farmers, but not a large proportion, could include a forge, drill, set of dies, anvil and other tools for iron working. The average farmer has not enough work of this character to warrant him in bothering with that kind of work, but he must do something along that line or run away to town every time a rivet gets loose or a bolt breaks.

In these days of wire fences a roll of wire and set of cutters is almost a necessity. Wire is one of the greatest emergency agents known. It can be used in a great variety of ways for repairing temporarily broken tools, implements, and machinery. A supply should always be kept on hand. A wire stretcher should also have its place here, both a single wire stretcher and fence stretcher. The latter can usually be borrowed or rented from the dealer from whom you purchase your fence, but one can never be sure of it, just when it is most needed. It is much more satisfactory to have one always ready when needed.

A good wagon jack is another useful little implement that comparatively few farmers posesss. Any handy man can make one in an hour or two and save a lot of bother in hunting up levers, etc., with which to raise the wheel from the ground to oil the bearing. Wagons are more likely to be oiled when they need it if a good jack is handy. A stone-boat may well be included amongst the small things of the farm. Few things will be used more than this if one is available when needed. In moving ligh tarticles about the farm for work such as field harrows, corn cultivators, barrels, boxes, stones and mony other things it would be thought indispensable on many farms. One of these useful implement scan be made by any handy person in an afternoon or on a rainy day at little expense. Three or four strong plank six feet long with some good cross pieces and a few bolts and nails will be all that is needed; or a couple of good crooks from the woods, or even two straight poles with the ends shaped up like a sleigh runner and covered with plank, either bolted or pinned on will do, and pay for the time labor, etc, many times over in a year or two.

Then how many farmers have a good grindstone? How can any one get along without one? Tools must be kept sharp if they are to be efficient and a good little tool of this kind is a splendid help on the farm The bicycle style is the best; for then one is independent of help. He can sit down at any old time and put his tools in working order without calling on anybody for help.

There are many other things, but these will suffice to point the way to better farm helps in some of the useful little things that can be had at small expense on the farm.

Rules Governing N. B. Standing Field Crops Competitions Season 1918.

Standing Field Crops Competitions will be held in the various counties of New Brunswick during the season of 1918 on the following basis:—

There will be four competitions in each county, viz:—

Wheat 1 acre; Oats 2 acres
Turnips, 1 acre; Potatoes 2 acres

The variety must be named when making entry.

An entry fee of fifthy cents will be charged for one crop and twenty-five cents for each additional crop entered by any one farm.

Entries will not be received for more than one variety of wheat, oats, turnips, or potatoes from one farm.

Entries accompanied by the saipulated entry fees must be lodged with the Secretary of each Agricultural Society on or before July 20th.

The Secretary of each Agricultural Society will forward all entries and fees thus received to M. A. MacLeod, Supt. Agricultural Societies, Department of Agirculture, on or before July 25th.

Entries not lodged with the Department of Agriculture before August 1st and entries not accompanied by the specified entry fees will not be judged.

The minimum number of contestants to constitute a competition in any one crop in a county will be five.

A przie will not be awarded on any crop that does not score 80 points out of a possible 100 points.

The number of prizes in each competition will be based on the number of competitors and the score tthey make as follows:

5 entries scoring 80 points or over $15
6 to 10 " " " " " " 30
11 to 15 " " " " " " 45
16 to 20 " " " " " " 60
21 or more " " " " " 75

The sum of five dollars will be deducted from each of the foregoing amounts and the balance will be divided pro rata among the contesants scoring 80 points or over.

To the highest awards will be added an additional sum of three dollars and two dollars respectively (these amounts constitute the five dollars deducted as above mentioned as a special inducement to aim for first place.

First and second prize winners will be required to exhibit their grain and roots at the Provincial Seed Fair, Fredericton, before the above mentioned additional amounts are paid.

The judging will be done by representatives of the Department of Agriculture.

Prize winners in the Standing Field Crops Competition will find it to their advnatage to select, clean and grade their surplus grain and offer it for sale for seed purposes and buy their feed oats if necessary. The growing of good seed grain is a profitable side line for the progressive New Brunswick farmer.

Establish a reputation for good seed and square dealing.

Sell no grain for seed that you would not wish someone else to sell to you nad all your seed grain supplies will readily sell at remunerative prices.

An entry in the field crops competition will start you on the right track. New Brunswick Departement of Agriculture.

M. A. MacLEOD,
Supt. of Agricultural Societies.

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

Subscription price $1.00 per year. This paper is sent to subscribers unless a definate order for discontinuance is given.

The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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The Maritime Farmer, instead of giving you one receipt in the year for a paid subscription, sends you 24, or one every two weeks. You will find it on the GREEN COLORED LABEL on which your address appears. The date printed thereon is that on which your subscription terminates. If on payment of your subscription the date is not changed within two weeks, please notify us. No other receipt will be sent.

JUNE 25, 1918.

DATES OF ISSUE.

July	9-23
August	6-27
September	10-24
Octoebr	8-22
November	5-19
December	3-17

NO MORE BONUSES SHOULD BE GIVEN

From time to time the dominion and Provincial Governments have been petitioned to grant bonuses to various enterprises. The applicants include public utility corporations, those holding semi-public franchises and others who carry on their businesses as close corporations. There has never been any evidence in Canada that these applicants are at all modest in their demands. There are in Canada many now influential men who have simply become wealthy and notable because of their ability to keep their hands in the public chest, which is another way of saying that they have had their hands in the pockets of nearly everybody in Canada. It is a more genteel method of picking pockets, that is all. It has often struck the Maritime Farmer as rather funny that a person's money, simply because it passed through the hands of a public treasury, should be invested in a different way from that which the original owner would have followed had he himself, made the investment. If a private individual takes stock in any corporation, he expects to receive an interest in the business and a stock certificate certifying as to his holdings.

When the Government takes stock in one of the hundred and one enterprises placed before it for consideration, it is expected to give, what are popularly known as bonuses. Just where the distinction should be drawn between a bonus and an investment is not quite clear. The Maritime Farmer believes that in future dominion and provincial governments giving railway subsidies, bonuses or whatever you may choose to call them, should receive stock certificates showing the amount of the government's interest and if dividends are earned by these concerns then the people of Canada or the people of the provinces interested should receive their share of the dividend. The creation of multi-millionaires, knighted baronets, etc., has been a rather costly investment for Canada and it is pretty nearly time that the thing was cut out. For instance, the people of Canada made McKenzie & Mann millionaires, by building the Canadian Northern Railway. Then the Government of Canada knighted them. Now the people are called upon to pay $10,800,000 for the common stock of the Canadian Northern Railway, a road which they have already paid for and well paid for. The whole system is an outrage and should cease.

STOCK FEEDING MUST BE CHANGED

In this issue of the Maritime Farmer is published an article on the mill feed situation which should be carefully read by all stockmen. tI shows that not only are mill feeds expected to be scarce this year, but that those in closest touch with the situation are making a most vigorous effort to overcome difficulties which are presenting themselves. Ontario, where the largest flour mills in Canada are located, has entered into an agreement with various millers to supply balanced stock feeds. These are to be sold at cost throuh a committee appointed by the Ontario Government to meet the increased difficulties of getting mill feed supplies. That steps were taken in Ontario some months ago to guarantee against disaster is most suggestive. It is a warning which should be heeded in other parts of Canada, including the Maritime Provinces. A representative of the Maritime Farmer was sent to Quebec and Ontario to look into the feed situation, and he found that in Ontario it had been decided that it would be unwise to depend upon the supply of shorts and bran to meet the requirements for feeds this year. If Ontario expects to be short in her supply of ordinary mill feeds, it looks as if Nova Scotia, Prince Edward Island and New Brunswick would suffer hardship in this direction. Present indications suggest that farmers in the Maritime Provinces must make up their minds to substitute balanced feeds for shorts and bran. There are many excellent feeds procurable but we have been so accustomed to using one or two kinds that the proposed change almost comes as a shock to the average stock feeder.

However, the situation has to be faced and met. The Maritime Farmer has been endeavoring to procure information as to balanced feeds, their content, keeping qualities and available supply. This information will be published later for the benefit of those interested in stock feeds.

KEEP ON PLUGGING

The ultimate heroism is not, as one might suppose, to enlist and march valiantly away to a post of duty "Somewhere in France." It is not the waving of flags, the singing of songs and the delivery of patriotic orations. It is not the purchase of a "Victory Bond" or a generous subscription to the Red Cross. The ultimate heroism may include all of these things, but is something which transcends them all. The finest heroism in the world is the heroism of endurance. Canada will not need an exhortation to courage in the trenches or on the seas, but Canada needs to-day and will need all through the war, the vision of the ultimate heroism that means quiet fidelity to routine task. How can be best serve the Nation? By quietly attending to our own business as if nothing unusual were happening, and by implicit obedience when the call to other service comes. We shall be better patriots in the ranks if we are good patriots on the farm. The world is full of bright men who are eagerly planning to do big things—when the right time comes. Their ideals are high—but they never get very far because in dreaming about the future they overlook the opportunities of the present.

Working for results leads to success, while simply waiting brings disaster. When good business-building ideas come to you, act upon them. Don't stop with planning. Develop your ideas—improve them—do something to-day to put them into action. Well laid plans are necessary for every successful undertaking, but they're worthless if not carried out. Do everything to put your plans into effect. If you do that, success is certain.

Success and efficient activity attract success, and receive voluntary help from unexpected sources. He who can be efficient and fruitful, if he stays where he belongs, becomes a mere cumberer of the ground when he strays into places where he has no real ties.

On the highway of time frequent obstructions are placed, which are nothing more than indicalots of progress, and every time they are passed they register your turnage of pluck. Anyone riding in an auto, looking far ahead and seeing a rise in the road, will recall at what a pitch the grade seems to be and to what a height it seems to reach; his attention is diverted and suddenly as he comes to the top of a slight range he recalls what he had seen and looks for it and discovers that the hill which had threatened to test the powers of the engine, when reached, resolved itself into an insignificant grade.

This holds true of most of the hardships and vexations of life; in the distance they loom large and threatening, but if faced and tackled they lose their strength on approach, and in nine cases out of ten their dangers and trials prove mythical.

Many people have sighed and thought or said: "I don't see why it is that everything he touches turns to gold." The men who seem to have the power to take hold of anything and make a success of it—turn it into gold if you like—do not have that power. Their successes only are talked about. Their failures they keep to themselves. They hide them, forget them. Heinz, the fifty-seven varieties man, failed two or three times, but came up smiling each time. And to-day he has arrived.

Stiffen your backbone, set your jawbone.

The ones who really deserve success keep on trying and in spite of reverses find the highway, broad and level and well lighted, that leads them straight to their mark.

It is quite a number of years since air brakes were first applied to trains.

Westinghouse called at the office of Commodore Vanderbilt, one of the railroad magnates of those days. He was denied entrance time and aain. Finally, however, persistence won him an interview. After he had stated his case, shown his drawings and was ready for his closing argument, Vanderbile sat back in his chair, fixed his deep set eyes on him and said: "What this really amounts to is that you think you can stop a train with air."

"That's just it," said Westinghouse.

Vanderbile pressed a button and a secretary answered the call.

"This man is insane. Throw him out and don't let him in here again," thundered the millionaire.

But you recall that air brakes are in universay use now. Suppose Westinghouse had accepted the dictum of the greatest railroad man of that day and given up his fight for recognition! The loss would be incalculable. The whole world would be the loser. Many thousand more lives would be sacrificed each year, millions of dollars would be wasted in wrecks that today are avoided because it is possible to stop a rushing train in a few hundred feet. Without the air brake we would have no flyers, no swift mail delivery; we would be without hundreds of things we now accept as a matter of course.

Keep on plugging!

General Use of Vegetables will Help Bread Our Soldiers

Selected by Mrs. M. A. MacLeod

With thrift as the national watchword, the business of every family is to save every quart and pound of foodstuffs that grow this summer in America. Not one bunch of beets or handful of beans not needed for daily consumption should be wasted. Boys, girls, and grown folks alike must do their share in stocking the family shelves with provisions of all kinds for the coming winter. "Grow and can" must be the slogan of all.

June is the opening month for canning, for then the war gardens are beginning to offer their patriotic gifts to the nation in the form of rhubarb, and strawberries, with peas not far behind. Do not wait for the close of the season, but put up the new things as they come along. If you have never tried canning young beets and carrots, there is still something delicious in store for you. Now, when so many persons are cultivating gardens, the city family has a better opportunity to buy vegetables fresh. Only with fresh products will there be success in canning.

The cold-pack method is the simplest and most successful way of canning. There are only a few simple rules which, followed, insure success. Too few housewives realize, however, that it is the preparatory steps which decide whether or not the canning is to be a success. Choose your jars and tin cans wisely. If your family is small, pint jars are best, for with them no food is wasted. For the larger family, quart jars are of course the only wise choice. The careful and prudent housewife will always test her jars before it is too late. If there are cracks, or if the cover and clamp do not fit tightly, failure is sure to follow. Fill the jars with water and see if there are any leaks; run your finger around the edge of the jar as well as the lid where the rubber rests. Is the glass smooth and without cracks? If the jar is of the Lightning type, adjust a rubber, put on the cover, and snap the wire clamp; be sure that it fits tightly. If you have Mason jars they should also be tested for leaks. Does your cover screw on tightly without a rubber? If it does not, there must be some defect. With tin cans test the leakage in the same manner. These tests are the only securities for your success in canning, and the wise woman will apply them carefully.

No less care must be taken with your rubbers. **Do not use your last-year's rubbers.** Old rubbers lose their elasticity, are brittle, and break when stretched. Too often, also, is the housewife tempted to use the rubbers which come with jars. Since the length of time that the rubbers have been in the jars is uncertain, the person of foresight will not use them. Buy new rubbers each year. Good ones may be hard to procure, but the best are none too good. Be sure that you can answer the following questions satisfactorily: Does your rubber fit tightly on the jar? Can you stretch it considerably and have it return promptly to place without changing the inside diameter? Does the rubber break when stretched? With jars and rubbers that stand these tests, the housewife is now ready for canning. Wash the jars and covers and tin cans carefully in clean, hot, soapy water, taking special care if they have been used the year previous. Rinse them in hot water—plenty of it—then place in a large pan, cover with boiling water, and keep them hot until you are ready to fill them. In the cold-pack method, sterilization of the jars is not necessary, for during the cooking process not only the fruit or vegetables but the jars as well are completely sterilized. The rubbers should be dipped in boiling water before you are ready to use them.

Can fresh vegetables! Can fresh fruits! Too much emphasis can not be placed upon the word "fresh." If you have no garden of your own, buy from a nearby farmer. It is a risk to buy vegetables from a market unless one is very sure it deals in fresh products. The fresher the vegetable, not only the more choice will be the canned product, but the smaller percentage of spoilage. Peas, beans, and corn should be canned within five hours of the time of picking. Then, too, of equal importance is the warning not to handle too large a quantity in hot weather. Do you realize that many of the failures in canning last season were due to the effect that people allowed their vegetables to stand, after being blanched, instead of packing them into the jars immediately? Remember a few jars each day well done are better than many jars carelessly done. Wash the vegetables carefully to remove all grit and dirt. Vegetables with thin skin like tomatoes may be wiped with a damp cloth. Greens are the most difficult to clean. These should be rinsed in several waters with a little salt added to draw out any insects that may be inside. Cauliflower and white turnips should be soaked in salt brine before blanching. Grade your fruit and vegetables. Imperfect fruit may be used for jams and jellies. For a few jars, the tightly covered kettle serves the purpose well.

With clean, fresh fruits or vegetables, we are ready for the next step. All vegetables and some fruits are blanched or scalded as a preliminary in the cold-pack method. The length of blanching varies with the product and may be done with either enough boiling water to cover, or steam. Perhaps a cheesecloth bag or large square of cheese cloth proves most useful, the washed product being tied up in the bag and placed in the boiling water to cover. The cheese-cloth bag is suited to all small vegetables and fruits such as peas, beans, greens, pineapple, etc. The wire basket is useful for tomatoes and other vegetables. With delicately flavored greens and green vegetables, the blanching is accomplished most satisfactorily in steam; by blanching in any other way you will lose the iron which makes green vegetables so valuable. Either a steam cooker or a colander placed over boiling water may be used for this process.

Blanching is an important step. First, it helps to insure a close pack by making the product flexible, as in the case of string beans, or by causing a shrinkage, as with greens. It partly eliminates strong acids, begins the sterilization of the food, and loosens the skins of certain fruits and vegetables, such as the tomato, In some cases it is impossible to give a definite time for blanching. The skin of young beets may be loosened in a very few seconds, but with older beets it takes a longer time; you must rely on your own judgment. But judgment is assited by a carefully tested time-table. **The cold dip** is equally important. It follows the blanching. Immediately after the removal from the boiling water, the fruits or vegetables should be dipped in and out of cold water. **The colder the water, the better.** This Treatment cools the food sufficiently to arrest all flow of juices sets the color, and makes it firm and easily handled, but it should not be allowed to remain for any length of time in cold water.

We are now ready to pack the product into the clean hot jars or tin cans. An aluminum funnel makes the process of filling very simple. With such vegetables as beans, beets and carrots, fill the jar closely, but without crushing, to within one-half inch of the top, using a spoon to insure a close pack. These vegetables may be canned whole, in section, slices or fancy shapes, as one desires.

The filling of the jars with boiling sirup or water is the next step. In the case of vegetables, one teaspoonful of

(Continued on page 601)

Home Canned Food is Safe

If You Follow These Directions

1. Seect fresh, clean fruits and vegetables or none at all.
2. Test every jar; even one crack spells sure loss.
3. Blanch. If the table says ten minutes, eight will not do it
4. Dip the product in and out of water—the colder the water, the better.
5. Pack clean hot jars with the cold-dipped product, adding salt to vegetables.
6. Pour on the boiling liquid to within one-quarter inch of top.
7. Place rubbers and covers and partially seal.
8. Sterilize the products the required time. Begin to count when the water boils.
9. Remove the jars and seal at once. Invert to cool.
10. Label, wrap, and store on a cool, dry shelf.

Time-Table

For Cold-Pack Method

	Time of cooking (Minutes)				
	Blanch or Scald	Hot Water Bath Outfit 212° F	Water Seal Outfit Above 212° F	Pressure Cooker 5-10 lbs.	Pressure Cooker 10-15 lbs.
Apples	1½	20	12	8	6
Apricots	1-2	16	12	10	5
Asparagus	15	120	90	60	40
Beans (wax)	5-10	120	90	60	40
Beans (string)	5-10	120	90	60	40
Beans (lima)	5-10	150	105	60	40
Beets	5-12	90	80	60	40
Beet Tops	10-15	120	90	60	40
Blackberries		16	12	10	5
Blueberries		16	12	10	5
Brussels Sprouts	5-10	120	90	60	40
Carrots	5	90	80	60	40
Cabbage	5-10	120	90	60	40
Corn	5-10	240	180	90	60
Cauliflower	3	60	40	30	20
Cherries		16	12	10	5
Currants		16	12	10	5
Dewberries		16	12	10	5
Dandelion Greens	10-15	120	90	60	40
Eggplant	3	60	45	40	30
Figs	1-2	16	12	10	5
Fruit-Juices		15	10	8	5
Gooseberries	1-2	16	12	10	5
Grapes		16	12	10	5
Huckleberries		16	12	10	5
Kale	15	120	90	60	40
Mushrooms	5	90	80	50	30
Mustard Greens	15	120	90	60	40
Milkweed	15	120	90	60	40
Okra	5-10	120	90	60	40
Peppers, green or ripe	5-10	120	90	60	40
Parsnips	5-10	90	80	60	40
Peas	5-10	180	120	60	40
Parsley	15	120	90	60	40
Peaches	1-2	16	12	10	5
Plums		16	12	10	5
Pears	1½	20	12	8	6
Pineapples	5	35	25	10	6
Pumpkin	3	120	90	60	40
Quinces	1½	20	12	8	6
Raspberries		16	12	10	5
Rhubarb	1½	20	12	8	6
Sauerkraut	3	120	90	60	40
Squash	3-5	120	90	60	40
Salsify	5	90	80	60	40
Sweet Potatoes	5	90	80	60	40
Spinach	15	120	90	60	40
Swiss Chard	15	120	90	60	40
Strawberries		16	12	10	5
Succotash	5-10	120	120	60	45
Tomatoes	1½	22	18	15	10
Turnips	5	90	80	60	40

These figures are for quart jars. When using pint or one-half pint jars deduct three or four minutes from the time of cooking given above. When cooking in two-quart jars, add three or four minutes to the time. For altitudes of 4000 feet or more above sea level, add 20% to 25% more time to this schedule. Individual judgment should be used, however, to increase or reduce the time, based on whether the fruit or berries are unusually hard or soft.

HORTICULTURE

THE THIRD SPRAY FOR NOVA SCOTIA APPLE ORCHARDS 1918

As in previous appications several formulas have been used for this spray, all with good results if properly applied.

Regular Formula.—Lime sulphur, commercial concentrate 1-50 (1.006 sp. gr.) with arsenate of lime 1½ lbs. to 100 gals. may be used for this spray if the operator is careful to direct the spray at the upper surface of the leaves and does not stand directly beneath the tree and spray upward. It has been found that drenching the under side of the leaves with lime sulphur at this time may cause a serious decrease in the crop, particularly in some varieties and under certain weather and other conditions. It should be remembered that leaves may be damaged by lime sulphur without any apparent external injury, whereas when burned with soluble sulphur they may be comparatively uninjured beyond the visible burned area.

In some isolated cases leaf yellowing was reported from the use of arsenate of lime and lime sulphur in the later sprays in 1917. This can be avoided by adding 10 to 15 lbs. of hydrated lime to the above formula. The advantage of lime sulphur arsenate of lime in cost, reduced leaf burning and elimination of sludge (lead sulphide) can thus be retained and this defect corrected.

Substitutes.—In using Bordeaux, the Thompson formula 2-10-40 is preferred by many to the old 4-4-40 formula, as it does not cause severe russetting of the fruit or yellowing or bronzing of the foliage. It may cause a certain amount of net russetting and very often will give a paler color to the fruit. Arsenate of lime ¾ lb. or arsenate of lead 2 lbs. to 40 gals. of spray may be used as in the preceding spray.

Some growers prefer a spray of soluble sulphur at this time as it is said to have none of the disadvantages of the other sprays, neither causing russetting or dropping of the fruit if properly used. The following is the formula:

Soluble Sulphur..... 3 lbs.
Lime .....25 "
Arsenate of lime.....1½ "
Water.....100 gals.

Modification for Green Apple Bug.

The same formula as recommended in the previous spray for green apple bug should be used here, viz: soluble sulphur 3 lbs. blackleaf 40, 1 pint and water 100 gals. adding about 4 lbs. of soft fish oil soap if obtainable. Poison in most seasons is not needed at this time and many biting insects will be killed by contact if the foregoing formula is used. Poison cannot be used with this combination. If it is necessary some other fungicide than soluble sulphur must be used and no soap added.

Modification for Bad Outbreak of Tussock Moths.

In many parts of the Valley, a tussock moth outbreak is at its height and in very exceptional cases of extreme severity a heavy spray of poison may be added to save the crop. In such cases a spray of paste arsenate of lead 10-15 lbs. to 100 gals. of water may be employed, depending on the fungicidal value of this poison to control apple scab. Yellowing of the leaves by the above formula may be avoided by adding 10 lbs. of hydrated lime but even a moderate amount of yellowing is preferable to defoliation or having from 50 to 90 per cent of the fruit injured by caterpillars.

Application

A fine mist spray is most suitable for this application except where it is necessary to spray for green apple bug. There are indications that in some cases a certain amount of mechanical injury has been caused to the young fruit by holding the nozzle too close to the tree. While most growers will prefer the spray gun on account of greater speed of application it will be well in using this instrument to stand well off from he tree or even better, on the top of the tank when using it. Direct the spray as before towards the upper surface of the leaves if using lime sulphur.

Pests Destroyed.

The arch enemy at this time as at all others is apple scab and in 1916 we have as a close second an outbreak of tussock moth in many orchards. In such places the modification recommended for this pest may be necessary. The codling moth, a minor pest in Nova Scotia, is best controlled by this spray. In the control of fruit worms and bud moths it is only second in importance to the previous spray. This application is also of value in the control of the so-called "pit rot."

Note

Do not use Arsenate of Lime alone, and when using with Soluble Sulphur use plenty of Hydrated Lime to prevent yellowing of the leaves.

Do not add Soap to a combination containing Lime Sulphur.

Do not allow Soluble Sulphur to stand exposed to the air. Keep in a closed container.—G. E. Sanders, Dominion Entomoloical Laboratory, Annapolis Royal, N. S.

SPRAYING IN THE ORCHARD AND GARDEN

This year, if never before, we must pay attention to the spraying of our fruits and vegetables. The high price of sprays and the difficulty in obtaining them, will discourage many growers from thorough spraying, but with the large increase of land under cultivation, spraying is doubly important in order to reduce the vast loss through insects and disease.

Three sprays are absolutely essential in the orchard:—the first, just as the blossoms turn pink; the second, after petals have fallen but before the calyces have closed; and the third, 10 to 14 days after the second spray. Other sprays may be necessary, depending upon local conditions.

In the garden, spray at the first sign of insects and disease and repeat at frequent intervals. Potatoes should be sprayed the first time when they are 4 to 6 inches high and four or five times more during the summer. Spraying is best done before a rain, in both garden and orchard, since it tends to reduce the danger of spreading the disease spores.

An expensive outfit is not necessary. A knapsack sprayer which can be carried conveniently on the back, will meet the needs of the small garden while a small hand barrel pump can be used for somewhat larger areas containing fruit trees. If you have no sprayer, get one without delay.

Many sprays are in use but the most satisfactory for the orchard is Lime-sulphur and Arsenate of Lead. Bordeaux Mixture and Arsenate of Lead are best for potatoes. For the small orchard, it is enerally more satisfactory to et a ready-to-use commercial preparation if possible, than to attempt home mixing.

Plan something definite in your spraying, by outlining the work and securing the materials before they are actually necessary. Too many wait until the necessity of spraying finds them unprepared. Delays in transportation are frequent at present, and a sudden demand for material leads to a scarcity as well as increased cost.

Send to your nearest Experimental Station for a Spray Calendar, and any information necessary regarding sprays and the method of application.

E. M. RICKER.

CONTROLLING OF POTATO DISEASES AT PLANTING TIME

Potatoes are plentiful this spring. Procure your seed from a field which produced a good heavy crop the previous year. The smooth appearance of the seed alone is no guarantee of a heavy crop. Disinfect the potatoes before cutting the seed. The plan adopted by the Experimental Farm is to soak them for three hours in a barrel containing either of the following solutions:

Corrosive sublimate: 2 oz. in 25 gallons of water. (Note: fatal poison to man or beast.)

Formalin: 1 pint in 25 gallons of water.

In cutting for sets, throw out all potatoes showing rot or brown spots, or rings near the stem end and in the flesh.

Cut the seed immediately before planting. The longer you keep them cut the smaller the yield. Be prepared to meet the ravages of the potato bug. Spray your potatoes. Spraying pays! Use poisoned Bordeaux mixture. The poison for the bug, the Bordeaux for late blight. This is the solution; 6 pounds bluestone, 4 lbs. lime, 40 gallons water. Dissolve bluestone first in 15 allons of water. Slake the lime in another vessel, strain it if lumpy. Pour both solutions together and make up to 40 gallons by adding water. Add arsenate of lead paste, 2 or 3 lbs. per 40

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gallons of solution; or use 8 oz. Paris Green and 1½ lbs. of arsenate of lead for 40 gallons solution. Stir well and fill pump through fine meshed sieve. Particles will clog nozzles and are most annoying. Spray thoroughly, and cover all leaves well with spray. Don't drench. Commence as soon as the plants are a few inches high and continue every two weeks throughout the season.

For a large field use a high pressure horse-power outfit. For smaller areas there are many good hand sprays on the market.

Get your spray chemicals right away and arrange for the purchase of a sprayer; sometimes it is a good practice for several farmers to club together and buy a good power sprayer.

Watch the field, and throw out any sickly-looking or dying individual plants. Mark the one hundred best hills for future seed supply. From these select 80 which yield the largest number of uniform potatoes and plant these separately next year, and increase this practice until your strain yields highest in the neighborhood.

WHY ONIONS GO TO SEED

Onions grown from sets are not likely to go to seed if the sets have been properly grown and stored. Those sets which are a half inch or more in diameter are far more likely to shoot to seed than the smaller sets are. therefore, when sowing the seed from which the sets are grown, have it thick enough so that the seedlings cannot make sets that are too large. Furthermore, when the sets have nicely developed they should be gathered at once. If they are allowed to remain in the ground until the tops are all brown the root system will begin a new development. This may cause the heart to start just a little, so that the sets will not keep well in storage, and if they do keep fairly well they will have more of a tendency to shoot to seed. Good commercial growers shake their sets through sieves made of narrow slats. Those less than ⅜-inch in diameter are quite slow to start and seldom go to seed. Those less than ½-inch in diameter are also planted by themselves and all those too large to go through a ½-inch sieve are planted in rows by themselves because they start most quickly, are ready to harvest very early, and have the greatest tendency to bolt to seed. Thus, by having the large sets in a few rows the seed stalks may be more easily pruned away. If large onions instead of seed are desired these seed stalks should have the seed bud pinched off close to the seed bud where the stalk is small. If the seed stalk is cut off in the middle or lower, it leaves a large open hole. tl is supposed that if water settles down in this hollow stalk it may cause the heart of the onion to decay.

ORCHARD POLLINATION

It is conservative to state that the value of the honey-bee in cross-fertilizing the blossoms in the orchard is greater than the value of the honey production. Many fruit blossoms require cross-fertilization before they will set fruit, and the same thing is true of other plants, such a clover and buckwheat. While many wild species of insects serve this purpose the honey-bee is the only one which can be introduced economically to an orchard or farm, and, therefore, may serve as an insurance to cross-fertlization, if the weather permits their flight during the blooming period. Some have gone so far os to insist that no orchard can be properly and completely pollinated unless some stands of bees are kept in the district.

Bees, then, should be found in every orchard community, not soley because of their relation to the orchard, but because of the profit which the honey itself will yield, and with the scarcity of sugar, this is not to be overlooked. Therefore, at the present time, it is our patriotic duty to keep as many bees as possible. In some parts of Maine, bees are unusually successful.

Certainly repeated experiments have been tried to show that every orchardist needs the bees. Only recently an article was published concerning an orchard that only bore about 600 barrels of apples. Bees were bought and placed in the orhard, and since that time the same trees have borne 1800 barrels.

The Ben Davis is self-sterile. Some other varieties that are more or less self-sterile are: Yellow Bellflower, Roxbury Russet, Tolman Sweet, Gravenstein, King, Northern Spy, and Red Astrachan. Growers of these varieties will see that they must be pollinated in some manner, and certainly the bee is the cheapest agency, not asking but giving returns for its labor.

The past winter cannot be duplicated in forty years in its severity and length; even the late fall was out of season— therefore, the bees in Maine have suffered. Some beekeepers have lost larg quantities of their swarms, as the bees went into winter quarters without their usual late broods.

Frank H. Dudley,
Maine State Horticulturist.

IN BUYING WESTERN LAND you can be sure of fair dealing and reliable information if you make your enquiries through

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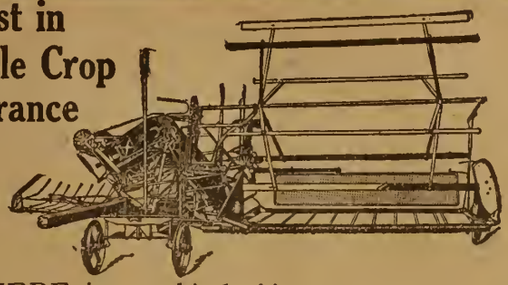

THERE is one kind of insurance you may not know about, which requires no premiums, on which you realize every year, and which this year is fully as important as any other insurance you carry. **When your crops are ready for cutting, McCormick binders and twine insure the harvesting of the whole crop.** No matter whether the grain be heavy or light, tall or short, standing or down, lodged and tangled, a **McCormick** binder cuts and binds it all without waste. That is what we mean by whole crop insurance.

McCormick harvesting machines and binder twine, always efficient, are better than ever this year, when every bushel of grain is needed. Remember this when you come to buy your binder and twine for the season's work. Remember, too, that the larger sizes conserve labor. Buy the largest binder you can use, and buy a new machine if there is any question at all about the efficiency of the old one. A new **McCormick** binder is absolutely reliable.

You can be sure of having your new machine on time by placing your order with the local dealer as soon as possible, or writing the nearest branch now for catalogues. The dealer will appreciate having your order early so that he can give some service to your neighbors who delay. And the world will appreciate it!

International Harvester Company of Canada, Limited

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WEST—Brandon, Man., Calgary, Alta., Edmonton, Alta., Estevan, Sask., Lethbridge, Alta., N. Battleford, Sask., Regina, Sask., Saskatoon, Sask., Winnipeg, Man., Yorkton, Sask.

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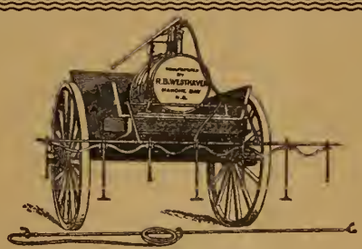

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"Perfect" Spray Pumps are made by

R. B. WESTHAVER, - Mahone Bay, N. S.

DO IT NOW

When a man ain't got a spray pump and is feeling kind of down.
Cause the pesky little insects won't leave his crops alone,
It's a great thing, oh my brethern, for a feller just to say
"Send and get a Perfect spray pump, and apply a coat of spray."

It makes a man feel queerish when the season's work is through
And the tatties are all blighted, and the apples wormy too,
Then order up a "Perfect" and do it right away,
And spray the fruit and tatties and save them while you may.

You'll never find another that does the work so well.
From the strainer up to handle, the outfit works just swell.
It has good agitation, and a real relief valve too,
It throws a spray that's perfect, and what more can it do?

Manufactured by R. B. Westhaver, Mahone Bay, N. S.

Butter Parchment at the Farmer Office

DAIRYIN.G

MILK FEVER AMONG HIGH PRODUCING COWS COMMON. IS QUICKLYY REDUCED BY SKILL

Milk fever is of common occurence among high producing cows. This was considered a very serious disease a few years ago, and in the majority of cases, the animals died. Today this condition is very rarely fatal.

Treatment for milk fever is strictly empirical, but it is certain that, even if we understood the causes of this condition, we could not treat it any more succesfully. There is no other disease in which the symptoms develop so rapidly and become so serious in such a short space of time as do those of milk fever, and yet, with our modern treatment the recovery is just as rapid and mystical as is the development of the disease.

This is a disease that cannot be determined by symptoms tlone, but the history and surrouding circumstances make diognosis possible. From wide experience the cow owner is able to know that the case at hand is milk fever and we may say that he arrives at his conclusion by intuition, but to the man who has seen several cases of this kind there comes to mind a series of symptoms that has in all probability been unseen by the attendant.

This is a disease of young cows, usually those having had one or two calves and, while it does affect old cows occasionally, it is not common. More often it follows an easy parturition and is rarely seen in cows that have experienced much difficulty in birth to their calves. Cows that are affected are invariably in good flesh and thrifty and are heavy milkers. The disease makes its appearance in the majority of cases within one to three days after th ecow has calved, but has benn known to occur before birth and as long as four to five weeks after calving. These latter two conditions are uncommon.

As a rule the cow is down when she is found by the attendant, but the line of symptoms that would be observed are pretty much as follows: The cow refuses to eat and stands without paying any attention to feed or surroundings. If she moves it is with a stiff, wobbly gait and it is noticed she cannot control her hind parts but weaves and staggers as she walks. The muscles begin to quiver and she shows all signs of having a chill. She will shift her weight continually from one leg to the other. In the course of an hour or so at most and often within the time after the ciw is seen she goes down; she lies on her breast, but is unable to get up; she seems very drowsy and rapidly gets worse until soon she is insensible and totally unaware of things that are going on about her. Her head is turned on one side and in this position she lies. Breathing is heavy and quite often moans and grunts as if in great pain, but this is not due to pain but rather the result of the insensibility that is present. There is very little milk to be found in the udder and the secretion of saliva is very scanty. There is no movement of the bowels or passing of urine during this time.

Warm water should be secured and an antiseptic solution should be prepared in which the milk fever apparatus can be cleaned. The cow is rolled into such a position that all the teats can be worked with by the operator; what little milk may be in them sould be milked out. The teats are then washed carefully in the antiseptic solution and the treatment is applied by means of a milk fever apparatus which consists of a milk tube to which is attached a small rubber hose. nI the center of the hose is a small metal chamber containing absorbent cotton saturated with a good disinfectant and on the other end is to be found a small rubber bulb or small metal pump. The milk tube is inserted into one of the lower teats and the teat is tensely distended with air; then the corresponding teat is inflated, and then the other two. To keep the air from leaking out of the teats, push the end of the teat in with the fingers. Do not use strings or rubber bands to keep the air in the teats.

This treatment is known in most districts simply as the air treatment, but originally these cases were treated by injecting into the udder solutions of potassium iodid in water, and then a salt solution, and this was followed by pure oxygen gas, to be later replaced by simple atmospheric pressure.

The cow should be treated just as soon as possible after being found, and even when she has been neglected so long that treatment might seem useless, she may recover. We have had cows in our practice that would recover perfectly after they were apparently dead. So in this condition as long as there is a spark of life there is good hope for recovery.

Under no condition is it advisable to attempt to give a cow suffering with milk fever any medicine by way of the mouth. The throat is partially paralyzed and the medicine might pass into the lungs and kill the cow.

In a short while after the cow's udder has been inflated she will begin to regain her senses; her breathing gets better and she gets brighter; after a while she will straighten up and swallow a few times and begin to act natural. As soon as she can be induced to attempt to get on her feet, she should be helped, and if she succeeds in getting up she should be steadied ofr a few minutes until she can stand alone.

A cow that lies stretched on her side when in this condition sometimes bloats badly and in this case should be tapped. It is better still to prevent bloat by keeping her propped up on her breast until she regains consciousness.

After the cow is on her feet she should have water, but no feed for the first ten or twelve days; at the end of this time she may be milked. No other treatment is necessary. If, however, the cow does not regain her feet within four or five hours infiate the udder as before.—Dr. G. H. Conn.

THE WATCHWORD FOR ALL DAIRIES IS CLEANLINESS

Cleanliness should be the watchword in all dairies regardless of the number of cows kept. The cow shed should be well ventilated, have plenty of light and all windows and doors screened in the summer to keep the flies from the cows while the milking is being done. It should be constructed for the cleanliness, comfort and health of the animals, the stalls should be the right length and the mangers the correct height for the comfort of the cows; the floor should be of some good material, some preferring cement, but a floor in a stable is damp most of the time, regardless of good drainage and bedding. The cement is always damp as one of its characteristics is to hold moisture anad it is also very cold in the winter and causes more rheumatism and other ailments in stock than most farmers give it credit for.

The milker and cows should both be clean before the milking is begun. A special suit for milking should be worn. Some put on old dirty clothes to keep their other clothing from ueing soiled, but such a practice should not be permitted. The milker's hands should be clean and he should not be allowed to smoke during milking, as th esmoke is apt to taint the milk and it is also dangerous if there is straw near. The milking should be done the same time each day.

The milk pails should not be made of wood as milk will penetrate the wood and soon become very unsanitary, even if they are well scoured and scalded. They should never be used for any other purpose and should be washed and scalded and put in the sun as sunshine makes them sweeter.

"Harnessing the Air" to Save Butterfat

The air is a great wizard. Properly employed, (as in a Sharples Suction-feed Separator) it will save North America more than eighty million pounds of butter which fixed-feed separators *waste* because 95% of them are turned below speed much of the time.

The Sharples Suction-feed principle really harnesses the air and makes it work for you. By means of the suction-feed, just enough milk enters the tubular bowl as can be *perfectly separated.* As your speed varies so does the suction-feed. Thus, Sharples saves the cream waste that results when fixed-feed separators are turned under speed.

SHARPLES
SUCTION-FEED
CREAM SEPARATOR

Skims Clean at Any Speed

While *air* is free to everybody, yet the suction-feed principle is exclusive with Sharples and fully protected. Bear that in mind when you investigate a separator and insist on knowing if it will *skim clean at any speed.* Get *proof.*

There are *no* discs in a Sharples tubular bowl which adds further to its superiority. The one-piece bowl is easy to clean, easy to turn—even for a boy. Write nearest office for catalog, addressing Dept. 79

Toronto, Ont. The Sharples Separator Co. Regina, Sask.
The Lounsbury Co., Newcastle, N. B.
J. Clark & Son, Fredericton, N. B.
Distributors through all their branches.

DC-21

Some dairymen advocate the use of a strainer, that has gauze and absorbent cotton as a filter. No doubt it would do the work alright, but as cotton and gauze couldn't be used twice, it apears that to use as much cotton as that would take in a year, in just one dairy and multply that by several thousand (providing several thousand dairymen used it) as scarce as cotton is at the present time, such a practice would not be conserving the nation's cotton. On the other hand, a well-made strainer with fine mesh wire is as good as any. It is very convenient to have one made to lt the supply can of the separator and the cost is about $1.00.

The separator should be kept thoroughl yclean or the cream will be

FARMERS AND BREEDERS

Who wish to keep their horses and cattle strong and healthy, should always have on hand a supply of

OMAZON

The Canadian medicinal stock food for Horses, Cattle, Sheep, Hogs and Poultry.

It will help to economize on feed and owing to its sovereign tonic and curative virtues will keep the stock strong, healthy and free from many ailments.

Order from your dealer. If he hasn't it in hand, he will be pleased to obtain it for you.

DR. ED. MORIN & CO., Limited, Quebec, Can.

It Pays to Use the Best!

252

Windsor Dairy Salt

Made in Canada

THE CANADIAN SALT CO. LIMITED

strong and make an inferior grade of butter. After it is washed it should be scalded and placed in the sun. Put the separator where there is no dust. As we go about the country we often see parts of a separator on benches or hanging on trees or fences near the road to sun, and the dust of the road so thick on them that you could figure on them. We wonder which is the more dangerous, the original germs or germs that are in the dust.

Milk and cream should be kept in a cool place in hot weather, and should not freeze in the winter, as freezing injures the quality. Not only milk and cream but butter also should be kept in a very clean place, free from any odors such as damp, musty cellar, poor cellar drains, anad even vegetables. Any odors whatever taint dairy products and lower their quality.

The churn in summer should be thoroughly cleaned and scalded (if the churn is of wood) then cold water poured in to cool it. By scalding the churn it prevents the butter sticking to the sides. After the butter is churned it should be washed and salted. For light salting put in three-quarters of an ounce of salt to a pound of butter, but one ounce is the amount usually used. One and one-fourth ounces to a pond of butter is considered as heavy salting. None but the best salt should be used. Never guess at th eamount of salt, but weigh the butter and then add the proper amount of salt.

In preparing the butter for market it should be packed in the best new, clean packages. They should be uniform in size and appearance. A package packed carelessly often condemns the best buttter. If the butter if to be packed for future use in the home, the sides and bottom of the tub or whatever it is packed in should be rubbed with salt. . Then put in a uqantity of butter, not more than can be firmly and evenly pressed to the sides, and continue until the tub is filled to within an inch of the top. Lay on a cloth wet with brine and one-half inch larger than the tub. Work the edges down and cover with about an inch of salt. Cover this with another cloth, put a tight head to the tub, then make a hole in the head and fill it with brine and keep it plugged tight. Keep it in a cool, dry atmosphere until wanted and the butter will be found good. Care sould be taken in choosing the article the butter is to be packed in.—M. P.

WATCH THE FARM SEPARATOR AT WORK

The separator should be watched. Be sure that the machine is level and securely fastened to a firm foundation. Remember that the speed of the separator is an important factor in its efficiency. If the crank is turner too slowly an excessive amount of fat will be left in the skim-milk. The milk should not be allowed to enter the machine until full speed is attained.

A temperature of 90 degrees F. is best for separation. If milk is cold when separated there is too much loss of fat. If the milk becomes cold it may be warmed by placing the can of milk in hot water. It is preferable, however, to separate the milk soon after it is drawn and before it becomes cold.

The separator should be kept clean if the highest efficiency of the machine and the best product is to be obtained. At the end of each separation flush out the bowl by pouring about two quarts of lukewarm water into the supply can. The parts may then be washed with scalding water, after which they should be allowed to dry. L. W. Morley.

It pays to crate-fatten broilers for 10 days if you are to sell them to customers or to dress them to ship, but it doesn't pay if they are to be sold alive to hucksters.—[Prof. Lester E. Card.

Don't Let Rough Roads Keep You from Riding

IT ISN'T NECESSARY. Hassler Shock Absorbers on your Ford will make "rough spots" feel almost as smooth as an even stretch of road. Their gentle, springy action absorbs every jolt and jar.

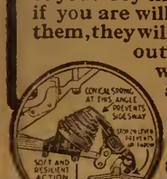
HASSLER PATENTED Shock Absorber For Ford Cars

Hassler Shock Absorbers make your Ford ride as easily as a $2,000 car. They increase tire mileage 20 to 100%, save gasoline, cut your up-keep bills one-third, and increase the resale value of your car. 300,000 Ford Owners recognize their economic necessity.

You can't realize how much difference they make until you try them. That is why we want to give you the opportunity to see for yourself.

10-Day Free Trial Offer

Phone, write or call for FREE TRIAL BLANK and we will have a set of Hasslers put on your Ford without a cent of expense to you. Try them 10 days. Then, if you are willing to do without them, they will be taken off without charge. Don't ride without Hasslers simply because someone discourages you from trying them. Accept this offer and see for yourself. Over 300,000 sets in use. Do it now.



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This is no time for "cream slacker" separators or wasteful methods of skimming milk.

With butter-fat at present prices and the Food Administration begging every one to stop waste, "cream slacker" methods of skimming milk must go.

Whether you are trying to get along without any cream separator or using an inferior or partly worn-out machine, you are wasting butter-fat and losing money.

Get a De Laval and save ALL your cream

Viewed from every standpoint—clean skimming, ample capacity, ease of operation, freedom from repairs, durability—there is no other cream separator that can compare with the De Laval.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

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Down the road or far across the fields is often an "entrance," a mere hole in the fence, a constant source of danger to stock getting through. The best way to

Keep Your Stock Where You Want Them

is to provide real gates, strong and durable. All Peerless Farm Gates are of heavy open hearth steel wire on strong tubular steel frames electrically welded in one solid piece, and braced like a steel bridge. No sag, no rust, no wearing out. Ask your dealer to show you Peerless Gates, also Peerless Perfection Farm and Poultry fencing with the famous Peerless lock at all intersections.

SEND TODAY FOR CATALOG. It tells you how to put up a fence to "stay put."

PEERLESS THE ALL AROUND FENCE

The Banwell-Hoxie Wire Fence Co., Ltd.

Winnipeg, Manitoba Hamilton, Ontario

LIVE STOCK.

WEANING TIME FOR YOUNG PIGS CRITICAL PERIOD

Weaning time is the most critical period of the hog's life. The approved practice is to wean at about six weeks. Teach the litter to eat three weeks before weaning, using a crib or creep which excludes the sow, or a separate pen. Feed, in a trough, preferably, middlings with skim-milk. With middlings at present unobtainable, finely ground sifted oats is best. Feed only small quantities at first and avoid having decomposed or stale food left over. After weaning, add shorts gradually up to equal parts, and from the second to the third month add barley or corn as one-third the total meal ration. First and last, avoid over-feeding with its consequent train of evils.

Within the last year at the Central Experimental Farm, experiment and subseuqent practice has indicated a system whereby weaning is simplified and the bad results of carelss feeding practically eliminated Instead of "hand-weaning" or feeding the weaning pigs milk and meal in a trough, a small self-feeder is substituted in the creep, skim-milg being fed in a separate trough Finely ground oats and shorts, and later ground elevator screenings witha small proportion of ground corn, if available, are placed in the feeder Thus, the little pig feeds himself when and as much as he sees fit, is able to eliminate from the meal eaten much fibrous material which he must consume willy-nilly where fed a slop, and incidentally accustoms himself gradually to skim-milk. Except in cases of early litters, the little pigs are given access to outdoor runs at all times from two to three weeks of age. Excellent growth is shown, the pigs developing clean, long, and thrifty, with no evidence of thickness, pudginess or lack of energy. Absolutely no evidence of indigestion or scouring has been seen, and in one instance where a dozen litters were so fed at a central feeder the percentage of "culls" was remarkably low. When finally removed from the sow, pigs so weaned, particularly where they are to be self-fed subsequently, give minimum evidence of the check in growth, usually Incidental to weaning in a greater or lesser degree. In short, while the experienced hogman can hand-wean his pigs with maximum results, the farmer lacking experience or depending upon attendants, is likely to run into difficulties. The method described besides reducing labor apparently removes the danger of overfeeding. Both method and results might be described as automatic.

In the foregoing method, skim-milk plays an important part. Where this or other milk product is unobtainable, experimental evidence would show that good pigs may be raised by following this method and supplying tankage, blood-meal, fish meal or some similar animal product in a separate compartment of the feeder, not mixed with the regular meal. Pigs, so fed, have shown only silghtly inferior in quality to skim-milk fed lots, but the cost to produce would seem to be considerably increased.

CO-OPERATIVE MARKETING OF WOOL VERY SATISFACTORY

J. D. Thompson, expert wool grader, representing the Livestock Branch at Ottawa, assisted by J. K. King, B.S.A., another representative of the Livestock Branch, have finished grading the wool accumulated at the Fredericton warehouse and have classified it as follows:

Fine medium	5. %
Medium	53. %
Low medium	34. %
Coarse	3. %
Rejects	.4%
Tags	.4%

On June 11th the wool valuators from Ottawa and Washington, accompanied by T. Reg Arkell, Manager of the Canadian Co-operative Wool Gorwers, Limited, Toronto, appraised the wool at Fredericton warehouse and placed the following valuations on the various grades:

Fine Medium	81¾	cents	per pound
Medium	78¾	"	" "
Low Medium	73¾	"	" "
Coarse	73½	"	" "
Rejects	54	"	" "
Tags	28¼	"	" "

Thtse prices are very satisfactory to the officials of the Department at Fredericton and undoubtedly will be equally satisfactory to those wool growers who have participated in this co-operative undertaking.

It will be noted that the major portion of the wool has graded as low medium and medium and that the price ranges from 73½ cents to 78¾ cents for fine medium. These prices are less freight to Boston, which will amount about one half per cent. per pound, thus giving and average price of from 7g-76 cents for wool in the grease.

The wool accumulated at the Moncton warehouse has graded slightly higher than that at the Fredericton warehouse, consequently the wool growers in the Moncto ndistrict will receive a higher average price for their wool than those wool growers in the Fredericton district.

The two warehouses at Fredericton and Moncton will continue to take in wool during the entire month of June, thus giving wool growers who have held their wool an oportunity to market through the Co-operative Association.

SUPPLEMENTING THE COW PASTURE

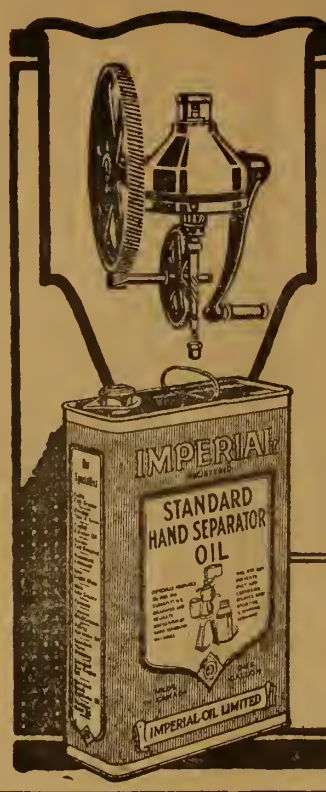
With coarse grains at abnormally high prices the question of many dairy farmers as to whether or not it will pay to feed concentrated feeds of any kind to dairy cows while on pasture.

Given an abundanse of good pasture, experiments at Macdonald College have proved that, it will not pay to feed the average dairy cow grain. With limited pasture and a summer of extremely unfavorable weather, it will pay to feed milking cows something besides the pasture. If soiling crop or silage is available, conentrated feed is less important, but for the best returns from every standpoint a combination of the two is necessary.

The prevailing practice in many districts is to depend upon pasture entirely. For the average cow having as she does small milking capacity and usually quite a territory of rough pasture, it is questionable if grain feeding will pay under present codnitions. On the other hand when farming is more intensified with less acreage in pasture and better cows, it is absolutely necessary and it will pay to supplement the grass when it gets short with at least a limited amount of grain feed.

The time to commence feeding is just when the cows begin or even a little before they begin to shrink because of short pasture. If feed is delayed until the cows have materially decreased in milk and flesh the results from feeding will at first be disappointing and will continue so until the cows regain normal condition. This fact explains many of the apparently poor results fro extra feedings.

The amount of feed necessary must depend on the cow's work, her condition and what else she is receiving, In the average case three to five pounds of meal per day will suffice. At the present time it is often a case of taking what meal may be available and mixtures are almost out of the question. Oil cake meal seems about as good value as anythink and less of it will do. It is a good milk producer, and is a splendid feed for sustaining and increasing body weight. If other feeds can be combined with it so much the better, but one pound of it per day even alone on short grass will go a long way in tiding the cows over a bad time.



THE BEST OIL IS CHEAPEST

WHETHER your separator runs hard or easy will tell in your profits. The easier it operates the less wear, the longer durability, the surer the returns on your investment.

Remember—it's the gears and bearings that take the wear. Lessen it with Standard Hand Separator Oil—made specially to reach and lubricate the revolving parts. Pure, highly fluid, non-gumming. As necessary as a special oil for your automobile.

Sold in pint, quart, half-gallon, gallon and 4-gallon cans; also barrels and half-barrels. By reliable dealers everywhere.

IMPERIAL OIL LIMITED
BRANCHES THROUGHOUT CANADA

Standard Hand Separator Oil

RHEUMATISM IN PIGS

Rheumatism in pigs can be generally attributed to cold damp pens and exposure, but it may occur in hogs that are well cared for. Overfeeding is also said to cause it. Specific causes unless it is in articular rheumatim, should not be considered in discussing the disease.

The symptoms are quite marked. These are fever, loss of appetite, lameness and general lack of condition. Sometimes large swellings appear in the region of the hock, knee and joints of the feet. nI acute rheumatism the pain in the affected muscles and joints is intense.

Preventive treatment is very important. It means the providing of dry comfortable quarters and the avoidance of exposure. Unless this is practised but little good can be gotten from medical treatment. A sloppy diet is also paluable. Salicylate of Soda is the most useful drug to give in this disease. The dose is 20 or 30 grains in the feed or as a drench, three times a doy. Larger doses and at more freuqent intervals may be given

Lister
POWER ON THE FARM

MELOTTE SEPARATORS
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THESE ARE HOUSEHOLD WORDS TO FARMERS THROUGHOUT THE WORLD.

"MELOTTE"—The suspended bowl cream separator—Turns easiest—Skims cleanest—Wears longest.

"LISTER" ENGINES—British-made throughout—A high-grade and reliable engine at a moderate price.

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Write for Catalogue to Dept. A.
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Works, Dursley, England.

DIARRHOEA
WAS SO BAD
Could Scarcely Do Work.

Mrs. O. Pritchard, Elora, Ont., writes: "About a year ago I was troubled very much for a whole week with diarrhœa. It was so bad some days I could scarcely do my housework. I took two or three different kinds of medicine, but got no relief, and was just at the point of going to see the doctor when I explained my case to a friend.

She put a half bottle of Dr. Fowler's Extract of Wild Strawberry in my hand and said: 'You take this and you won't need any doctor.' Before I had emptied the bottle I was cured, and have never had any return of the trouble. I can truly say that 'Dr. Fowler's' is the best medicine I have ever used for diarrhœa."

Dr. Fowler's Extract of Wild Strawberry is not a new or untried remedy, as it has a record of 72 years of cures to its credit, and is recognized on all hands as the only reliable remedy ever offered to the public as a safe and certain cure for diarrhœa, dysentery, colic, cramps, cholera, cholera morbus, cholera infantum, summer complaint and all looseness of the bowels, whether of children or adults.

It is particularly good for teething babies.

The price of Dr. "Fowler's" is 35c. a bottle, and we would warn you against accepting any substitute. Many of these are positively dangerous, and you are risking your life when to take them. The genuine is manufactured only by The T. Milburn Co., Limited, Toronto, Ont.

in an acute attack for a short time. Quinine and bitter tonics can also be given. Blistering ointments and liniments should be applied to the inflamed articulations.

AYRSHIRES SELL WELL

The Annual Consignment Sale of the New England Ayrshire Club was held at Charter Oak Park, Hartford, Conn., on June 11th and 12th and was largely attended. The bidding was brisk and competition keen, there being many purchasers for each animal. The average price for all animals in the sale was $400 and the highest price paid for a single animal was $4200.

The Canadian Ayrshire breeders were well represented, R. R. Ness, Howick, Que., consigned 6 head which averaged $890, "Barleigh Right Kind" (Imp.) selling for $1225. Hunter Bros, Grimsby, Ontario, also consigned 6 head, which averaged $1200, among them "Lochfergus Cherry" (Imp.)—33297—selling for $3750, and "Lady Mary"—37565—bred by D. A. Macfarlane, Kelsoe, Que., selling for $1200. Gilbert McMillan, Huntington, Que., consigned 3 head, which averaged $645, "Grasmaller's Flora" (Imp.) selling for $875.

(A fuller report of the sale will appear in a later edition.)

KEEP A PURE BRED BULL

Because

1. Cows are known by the "company" they keep.
2. Every calf has a right to pe well born, and the use of a grade bull is an infringement on this right.
3. He has a good and authentic record behind him; the grade has nothing but his tail.
4. There is no sale for the offspring of a grade bull among men who pay good prices for stock.
5. A purbred bull will sell at any time for any purpose for as much as a grade, and usually more.
6. Mr. Milkman, you should raise your stock and the use of a purebred bull is the first step in the right direction.
7. Except for the element of the risk, the cost of keep is no greater for a scrub or grade.—H. E. JUDKINS.

RID STOCK OF LICE

There is no better way to rid stock of lice than to wash stock thoroughly in a two to five per cent. solution of a coal tar disinfectant such as zenoleum or creolin. This should be repeated in about a week after the first washing. The animals should be rubbed dry after washing, then should be blanketed to keep them from taking cold, being especially careful in the matter in cold weather.

If the animals are to be kept free from lice, the stables should be celaned up being thoroughly disinfected, and provision for light and ventilation should be made.

PROPER MEANS TO SAFEGUARD GREAT INCREASE OF PIGS

The efforts to increase the number o fhogs will not bring about the desired result unless proper means are taken to safeguard both the sows and the pigs against disaster at the critical time of the arrival of the pigs.

Preparing Beforehand

Every farmer and breeder should keep a record of the date on which each sow was bred, and make a correct calculation that sixteen weeks from that day a litter of pigs may be expected. At least a week or ten days before the day when the pigs are expected the sow should be supplied with a pen by herself that is not very large but is warm and free from cold draughts of air. The reason is because it will take at least a week for the sow to become wonted to her new quarters and feel at home, a matter of considerable importance as the homelike feeling will prevent restlessness, which is a dangerous difficulty at this time.

Be sure and attend to giving the sow the proper feed to put her system in right condition. Do not feed her heavily, but give just what may be termed a moderate amount of food materials. The feed should contain some light rations like wheat bran and middlings, wihch put the bowels in a laxative condition. A small amount of vegetables like mangels, beets or small potatoes, say two or three pounds each day, will be of great benefit in several ways. It will cool the system and encourage the secretion of milk at the right time.

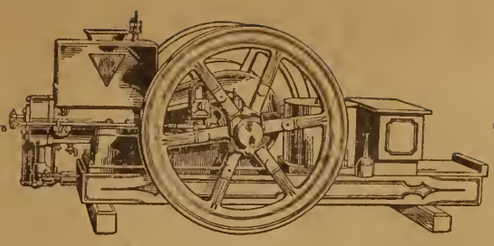
The bedding should not be too plentiful or coarse, as little pigs soon after they arrive are liable to get strangled with coarse litter and get discouraged about getting to the udder. If the bedding is abundant the pigs often work under it and get laid on.

At Farrowing Time

It is best to make all preparations beforehand and at the time the pigs are to arrive keep away and leave the sow to herself as a little disturbance at this time will often prove detrimental.

Feeding the Sow

While the sow should have a moderate amount of feed before farrowing, all feeds should be kept away from her at this time. Remember that she is sick and her system is not in condition to digest food. Do not feed her any heavy feeds at this time, and do not feed lightly for at least twelve hours after farrowing. After her sickness has disappeared a little sloppy drink can be given. When she gets up and manifests a desire for food begin by giving her a small quantity of light feed, largely sloppy feed, and increase gradually as she seems to desire. Do not attempt to get her on to full feed under a week's time. Bad results are sure to folliw if heavy feeds are given soon after the arrival of the pigs. If the sow is not seemingly injured by heavy feeds at thi stime, the pigs will be. It is not safe to take any chances in this respect.—N. A. CLAPP.



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FEEDING ROOTS TO HOGS

What is the relative feeding value of mangel wurzels, sugar beets and Oxheart carrots for hogs?—F. L. G.

In 100 pounds of sugar beets there are 13.5 pounds of dry matter, 1.3 pounds of digestible protein, 9.8 pounds of digestible carboyhdrates, and .1 of a pound of digestible fat. For carrots the figures run 11.4fi .8, 7.7 and .3 respectively, and for mangels 9.1, 1, 5.5, .2. Thus the sugar beet has the most dry matter, a little more digestive protein, and quite a bit more digestible carbohydrates. They would rank as hog feeds in the following order: sugar beets, carrots, mangels.

Probably the greatest mistake made in feeding roots to hogs is in giving them too great a quantity. Roots are very bulky, being approximately 90 per cent. water, and it is not advisable to use them for fattening hogs in a greater proportion than one-fifth of the ration by weight. They are particularly valuable for stock hogs, and for brood sows during the early part of pregnancy, but during the last 6 to 8 weeks before harrowing sows should not be fed a heavy quantity of roots, as they require concentrated feed for the growth of the young and the production of milk. Stock hogs and dry sows can be run through the winter on roots and alfalfa hay without any grain.

As to whether one should choose sugar beets or carrots for this purpose will depend quite laregly upon the yield in his own locality. When roots are to be fed heavily to stock hogs I would prefer the carrots to the sugar beets, in spite of the smaller quantity of nutrients in the carrots, because sugar beets have a peculiar biting pungency which attacks the throat to some extent when animals are fed heavily on them.—G. E. Morton, Colorado Experiment Station.

"Camouflage cattle"—you know the kind that looks good to the man in the street, but won't make the most of the feed they get—are slacker cattle, and the men who produce them are slacker cattlemen.

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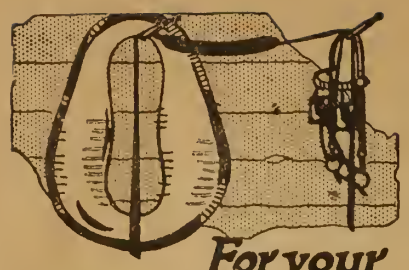

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DOUBLE DAILY SERVICE TO PRINCE EDWARD ISLAND

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With the Summer Time Table in effect June 2nd, there will be a double daily service between the Mainland and Prince Edward Island. Passengers by the Maritime Express from Montreal and the morning expresses from St. John and Halifax will be able to arrive at Charlottetown 7.05 p. m., Summerside, 6.05 p. m., and Tignish 9.35 p.m. By the Ocean Limited from Montreal, the Boston express via St. John passengers will arrive Summerside at 11.00 p. m. and Charlottetown 11.20 p. m. From the Island by leaving Summerside at 6.30 and Charlottetown at 6.00 a. m. passengers will connect with the Ocean Limited for Montreal, the express for Boston and the Maritime Express for Halifax. By leaving Tignish at 9.30 a. m., Souris 6.45 a. m., Charlottetown 1..50 noon, and Summerside, 1.30 p. m. passengers will connect with the Maritime Express for Montreal.

GROOMING AS NECESSARY TO THE WORKING HORSE AS FEEDING AND WATERING

If there is one duty more than another that is neglected in the stable it is grooming. The usual fate that overtakes the colt on the farm, destroys more than the breeder's art can catch up with in the supply effort. It is a process similar to the present struggle between the German U-boats and shipbuilding yards in Britain and America.

The Neglected Horse

Much of the destruction of horse energy on the farm comes from the neglect of the horse's toilet. Some of this carelessness is not altogether due to wanton neglect, but more through a lack of knowledge of the necessity of thorough cleaning and grooming. It is either counted as an unnecessary bother or excused out of ruling owing to lack of time. 8he farmer who is alive to the value of cleaning the horse finds the time and oportunity to do it. It does not take a long time when the right way is taken. Time can be misspent by grooming the parts that could best be done without, and neglecting the parts that most resuire it.

As soon as the colt is old enough to be put into harness, the object seems to be, in many cases, to wear him out or break his spirit as soon as possible. He is often worked hard all day, hastily put in the stable, fed and blanketed without being permitted to cool off, if blanketed at all, and left for the night without cleaning body or feet. The sweat saturates the blanket and the colt remains damp all night, the mud chills the legs and lessens the circulation, and foreign materials collect in the bottom of the feet, heat and keep the sole in a feverish codition. The next morning the driver comes to the stable, feeds removes the blanket, and with the comb curies the body a very little, the legs practically none and entirely neglects the feet, then harnesses the colt and goes to work. At every step the colt betrays his care; he is stiff, his joints are sore and his courage gone.

The Neglected Parts

While the teamster often takes much interest in rubbing the body and in keeping the hair well brushed out, the legs and feet are neglected, though really of most importance. The legs are the most exposed to water and mud, often remaining soaked the entire day, and to the ever present dust of summer. They are subject to very severe strain and concussion, and if they are to be kept sound they must be thoroughly cleaned and well rubbed so as to encourage the circulation and keep the parts warm and dry. This should be done every evening after a day's work. Nothing contributes more toward producing disease and unsound limbs than allowing the animal to remain all night with damp and dirty legs, especially in damp or cold stables. The cleaning and rubbing of the skin stimulates the secretions and improve the general tone of the entire system, but more especially upon the feet and legs.

The Correct Way

When the horse comes in at noon or night wet with rain or sweat, his hair should be evened down the natural way, and it will remain so when dry and is then easily cleaned. If it is allowed to dry when all swirled up it will remain so, and double the grooming will be necessary to make the coat sleek and clean. When a horse is wet with sweat his hair should at once be evened with a brush or stripper. It is no use using a curry comb at this stage. Allow him to cool off a little, then blanket him. His legs, if wet and covered with mud should be rubbed with cloth or straw to partially clean them; the hair should be evened in the same manner as the body. Later, when the blanket is removed, at last visit to the barn at night, the horse should be well groomed, the dust will be more easily brushed from the hair at this time than any other. If left on the skin the dust will find its way to the skin, and subsequent sweatings make it into grease and paste that serves as a medium for excessive sweatings and weakening of power and loss of spirit. When grooming, there is generally undue use made of the curry comb to raise the dust for the brush to extract. Some horses with tender skins feel this keenly, and the severe ordeal with the comb does them harm. If the horse is groomed at the right time—just when newly dry after sweat or rain - the brush will be sufficient to do most of the grooming on the body and the curry comb should be used mostly to clean the brush at every stroke when necessary.

Grooming the Feet

No horse has been properly groomed, however much time is spent on him, that has not had his feet examined. There are more lame horses through this neglect than any other cause. The daily examination and clean out with pick should remove all the dried mud and gravel that accumulates and sets up corns, thrush and similar troubles. There are more corns in the feet of horses than the average driver or owner ever dreams of, and the cause is chiefly through neglect of this part of the grooming duties.

A daily scrutiny of and cleaning of the feet will prove a medium of education to the horseman of the structure and growth of the hoof and will show when it is necessary to relieve the hoof by having shoes removed. The gravel stones that gather and are pressed by the baked dirt on the sole or frog are the cause of wet corns. They are formed by th ebruising caused by small stones either pressed by hardened filth or jammed between shoe and hoof. The horn overlying the bruised part becomes saturated with pus,, cracks and allows dirt or small particles of gravel to enter. The pain during the process is terrible and ultimately the horse becomes lame and at times unable to bear weight on the diseased foot.

Only Five Minutes Each Day

Gravel cannot make its way into the foot when the horn is sound; it is only when the sole becomes diseased, heated and soft by accumulated dirt and badly fitting shoes that gravel gets the chance o fdoing the damage and causing pain.

In lifting a foot to examine it sometimess a pinkish spot is seen in the sole. Severe bruising from an ill-fitting shoe or by stepping on a sharp stone with full weight will cause this inside bleeding, and the blood is absorbed by the sole horn, as ink is absorbed by blotting paper, and becomes stained red on that account. The after effect of this condition is dry hardened hoof, in which nutrition for the foot is stopped. Some farmers who notice this condition rub oil and grease over the hoof with the mistaken idea that it will bring them back to their growing condition. Never put oil on the feet, as that prevents the water from entering the hoof wall. The foot is like a sponge, very porous and sensitive to water, and will not stay in perfect order without moisture. Oil and grease clog the pores.

There are very few horses that have bad feet from inheritance, all their troubles come from neglect. Five minutes every day spent with an examination of the feet of the working team will put them right. It is time that must be spent before the daily grooming operations are complete.

PREPARING TEAMS TO STAND THE HARD WORK

On every farm where horse flesh is the motive power, there is one problem that comes once a year, namely, the preparation of the teams so that they can stand the hard work of spring and summer without a blemish resulting, such that the value of the horse is not greatly decreased and the ease of working it greatly increased. One of the first tteams I ever drove had in it

MINARD'S
"KING OF PAIN"
LINIMENT

I was cured of terrible lumbago by
Minard's Liniment
—Rev. Wm. Brown.

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OR PAIN KILLER FOR THE HUMAN BODY

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Caustic Balsam

IT HAS NO EQUAL

For the Human Body —It is penetrating, soothing and healing, and for all Old Sores, Bruises, or Wounds, Felons, Exterior Cancers, Boils Corns and Bunions, CAUSTIC BALSAM has no equal as a Liniment.

We would say to all who buy it that it does not contain a particle of poisonous substance and therefore no harm can result from its external use. Persistent, thorough use will cure many old or chronic ailments and it can be used on any case that requires an outward application with perfect safety.

A Perfectly Safe and Reliable Remedy for Sore Throat, Chest Cold, Backache, Neuralgia, Sprains, Strains, Lumbago, Diphtheria, Sore Lungs, Rheumatism and all Stiff Joints

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Will reduce Inflamed, Strained, Swollen Tendons, Ligaments, or Muscles. Stops the lameness and pain from a Splint, Side Bone or Bone Spavin. No blister, no hair gone and horse can be used. $2.50 a bottle at druggists or delivered. Describe your case for special instructions and interesting horse Book 2 R Free.

ABSORBINE, JR., the antiseptic liniment for mankind, reduces Strained, Torn Ligaments, Swollen Glands, Veins or Muscles; Heals Cuts, Sores, Ulcers. Allays pain. Price $1.25 a bottle at dealers or delivered. Book "Evidence" free.

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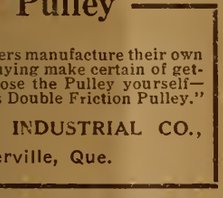

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Advertise it in the Farmer.

an ugly horse and his disposition had been thus re-arranged because somebody had sometime erred in not having him properly hardened when he started in with the spring work. This horse was a big fellow, abundantly able to work, but the moment the least break in the skin came on either side of his shoulders, the only way he could be put into the collar was to buckle it and slip it on over his head.. Even at that he would do considerable jolting about when the harness was put on him, and of al the unpleasant beasts to work, this horse beat everything I ever tried. He never would take hold until the other horse started the load, and all this might have been averted by a little judicious care in handling. I know this to be a fact because neighbore who knew the conditions said so.

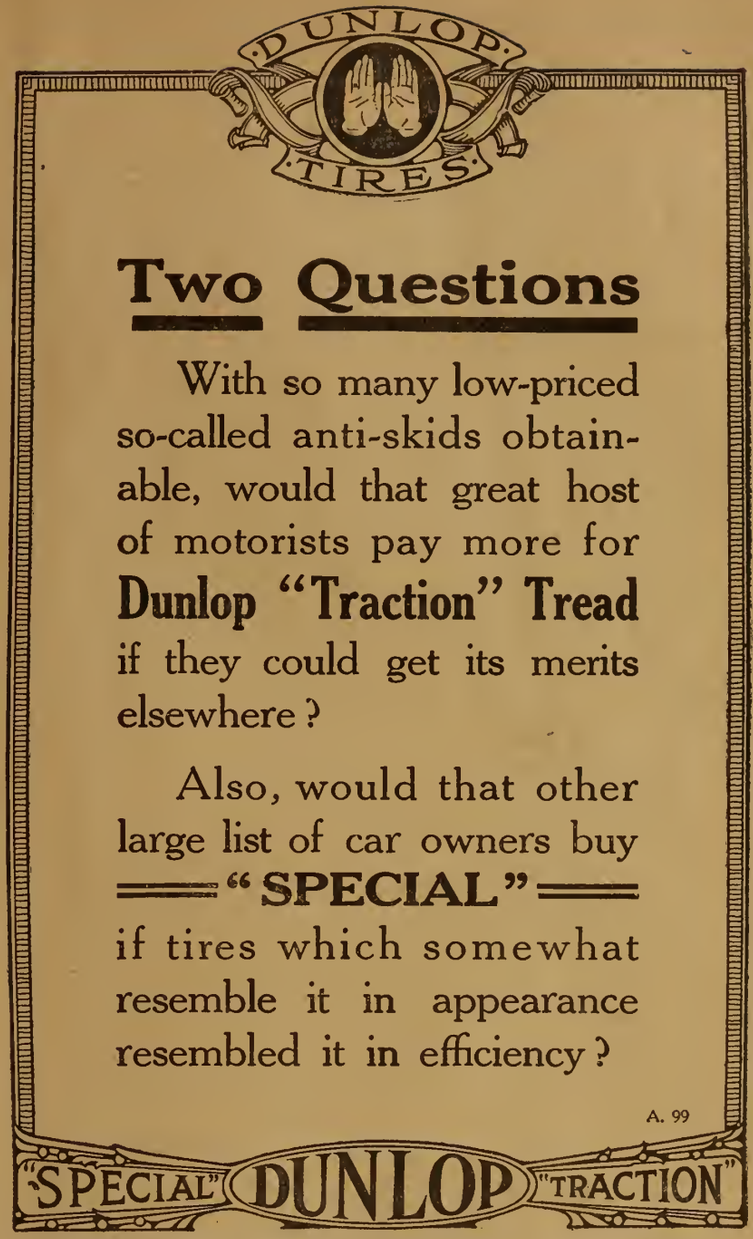
Then there are hundreds of horses that have shoulders that will never be fit to work until there has been an operation performed and part of the scar tissue cut away. Every time a shoulder is sore, in healing up there is bound to be some scar tissue formed the more the shoulder is affected, the more scar tissue is formed and in the end we have a great ill-shapen portion of esh and hide that is practically impossible for the horse to use in hauling and a sore shoulder is pretty likely to cause one or the other; a poor hauler or a poor disposition.

This condition can, in most cases, be greatly relieved by hardening a horse into the work. Usually one of the first jobs the team is put at is that of hauling manure, and if there is any heavier job than hauling a manure spreader in the early spring, I have yet to see it. The fact that the heavy hauling lasts for only a short while does not particularly alter the question. Blisters may be put on tender hands in ten minutes while if the same work was spread over two hours it would have not ecect whatever, so in hardening the horses into work it is better to give them light work for olng periods rather than severe work for short periods. Light work stretched over a week or ten days will usually put the teams in good condition for their spring's work. If this does not seem to harden the muscles rapidly enough, the shoulders may be bathed hemlock bark may be had. Good strong table te awill also do the same thing, or an alum water solution is often of value.

The collar that fits a horse is the most imperative of all. No amount of washing or hardening will make a misfitting collar fit. The collar should be of the right size and adjusted so that the point of draft will be just a little above the shoulder point. Pads on collars usually do but little good. When a rough plow handle blisters our hands we do no usually put on canvas gloevs. Rather, we get out the draw shave and some sandpaper and make the handles smoother. In this connection I have used the solid stove blacking to rub onto the wearing surfaces of the collars every morning to make them smoother.

Seldom as it is done, harnesses are made so they can be adjusted to the horse. It is easy to adjust the harness to the horse, but is much more difficult to adjust the horse to the harness as is so often tried. There is no excuse ofr the top of the head becoming sore through too tight a bridle. This often leads to poll evil. Neither is there any excuse for the crupper being so tight as to cause the horse to rise up behind in righteous indignation. The hames should also be adjusted to that the part where the hauling is done should be at or a trifle above the shoulder joint.

Not only does it conduce to the pleasure of driving a team to have them free from sores and blemishes, but it also keeps them more valuable in case a sale is to be made. If the harness is gone over carefully each spring to make sure that it fits the particular horse on which it will be used all summer, there is but little excuse for sore shoulders and sore necks.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Two Questions
With so many low-priced so-called anti-skids obtainable, would that great host of motorists pay more for
Dunlop "Traction" Tread
if they could get its merits elsewhere?
Also, would that other large list of car owners buy
"SPECIAL"
if tires which somewhat resemble it in appearance resembled it in efficiency?
A. 99
"SPECIAL" DUNLOP "TRACTION"

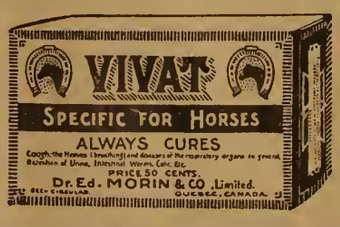
Harden off the shoulders by light work for a time and if this is not sufficient, bathe them once a day in some good muscle toughener. In addition to this careful driving and close watching will keep the team in A-1 condition, to the mutual profit of everybody cnocerned.—I. J. Matthews.

SUCCESSFUL PIE SOCIAL AT RENOVATING A BUGGY

Husbands who are not "Peter Tumbledowns" by any means often have too little pride in the up-keeping of buggies and harnesses, thereby detracting from the appearance of the fine teams which most of them possess. Years ago I began to look after the buggies, keeping them clean and painting them occasionally myself. Such work is neither hard nor disagreeable, but pleasant as outdoor work usually is. With an ordinary spray pump the mud can easily and quickly be rinsed off the wheels. Cleaning the carriage is no harder work than washing woodwork in the house. Clear water and plenty of it is all that is needed, no soap, of course.

When perfectly dry a coat of ready prepared carriage paint can be put on or thereabouts. No varnihsing or with an ordinary flat brush in an hour other treatment is necessary when this sort of paint is used. This year I put on new cushions which came ready to be tacked into place. I ordered them to fit by sending a pattern and measurements with the order. I also ordered a new top and dashboard at a total cost of $15. The buggy had looked old and dilapidated with its lack of paint, ragged cushions, its worn-out dashboard and sagging top, a discouraging subject for renovation certainly. However, the wheels, gear and box were good and with the fresh paint and new cushions, dash and top, it looks as good as new.

The Recognized Specific of Diseases of the Horse



A sovereign remedy in powder form which cures, Coughs, Heaves, Colic, etc. It strengthens the work horse as well as the race horse, and enables them to do more and better work. It has been successfully prescribed by many veterinarians notably by Dr. J. D. Duchene, in many critical cases, where results have proved remarkable.

A 50c box will be sufficient for six days' treatment.

DR. ED. MORIN & CO., LIMITED, - - Quebec, Canada

POULTRY.

FINISHING OFF POULTRY FLOCK FOR THE MARKET

There is something of a study about finishing off the flock of chickens to get the best out of them. We have three different classes of poultry products in that flock. The first to take our attention is the broilers, then the inferior pullets and cockerels that prove less valuable than we had expected when separating them from the broilers, and finally the pullets and cockerels we propose to keep.

As soon as the flock begins to develop feathers we will have to begin our study of their characteristics. Last year I picked out one cockerel that I planned to save, provided he showed no bad characteristics before he had half his feathers. He was so much larger than any other bird in the flock. Two or three pullets soon showed early maturity, and were chosen, subject to later developments. When the cockerels were of the broiler age my selected cockerel weighed ten ounces more than any other in the flock, and the pullets were not disappointing me. These were White Orpingtons, and all continued to show good points, but I have had Buff Orpingtons that would show up well at this stage and later show bad undercolor or black in the wings or tail, or some other bad feature that did not show at once.

Picking out the good ones.

One year we picked a fine buff pullet early, and she kept on developing as fine as she promised, and when she was a trifle over six months old she weighed seven and a quarter pounds, and was almost perfect in form and color. She began to lay early, and she kept it up, being one of the best layers we ever had in our flock. When all the pullets were fully developed many looked as fine as she did, but I would not have exchanged her as a breeder for any two of them. She had early maturity, heavy weight, good color held from the first, and splendid laying qualities, and we felt she would be likely to hand these characteristics down. If we had given little attention to the individuals of the flock early we would not have been able to distinguish her points. Early maturity is very important, and this feature can only be secured by close attention during growth.

When we have decided on what chicks we are going to market as broilers we should separate them at once and finish them off so they will bring the best price and come in on a high market. If we take these when they weigh about a pound and a half and shut them up we can put the other half pound on them in half the time we could do it with them running loose, and the gains will be made at less cost. Nor is this all. The time saved may make several cents difference in the price received. Quite often broilers drop a cent or two every day when the breaking point is reached. It will always pay to force broilers, for they will put on weight instead of growing in frame. If they are shut up where they get just enough exercise to keep them healthy, and get fattening food all they can eat. As they have little else to do but eat they do lots of that, and, so long as their digestion is good none of this food is wasted. It goes into fat and flesh. Plump broilers bring the top price, too.

When the pullets are finally selected which we want to keep, and the young cockerels selected also, we will bein to feed them for vigor and health with not so much attention to flesh or size. It is no benefit to give a hen over-development. If the size is shown during her early growth, and she matures early, she does not need to be forced any later. Let her range all she pleases, give her a well balanced ration, an never try to get her to eat more than she shows an inclination to eat. Let her develop normally. This same rule applies to the cockerels, though here we want to be on the lookotu for the least fault, for we do not want to breed from anything but the best, or sell inferior birds to others for breeding purposes.

It is the culls from the flock of pullets and cockerels that we saved for breeding purposes that stands to give us the most trouble and the least profit. They will not sell as broilers any more, and they will bring a low price as springers. Better than the part of the flock sold early, they will hardly bring us the profit these did. There is one market for these that will often save us and that is for breeding purposes to the farmer who is anxious to get better stock to mate with his ordinary mixed flock. Thees cockerels are fine, of course, or they would not be saved in the first place, and the small faults, which cause their rejection finally will not be an objection to many who keep pure-breds even, when they only want them for home use, and this market may take the supply at a fair profit. The cull pullets may be sold well for breeding, as they will be better than many a pure-bred flock iven ordinary selection, and a price secured that will give a profit on these. These are not stable markets, but still there is a good chance for them in any community.

L. H. COBB.

GAPES IN CHICKS PREVENTED BY EASY METHODS

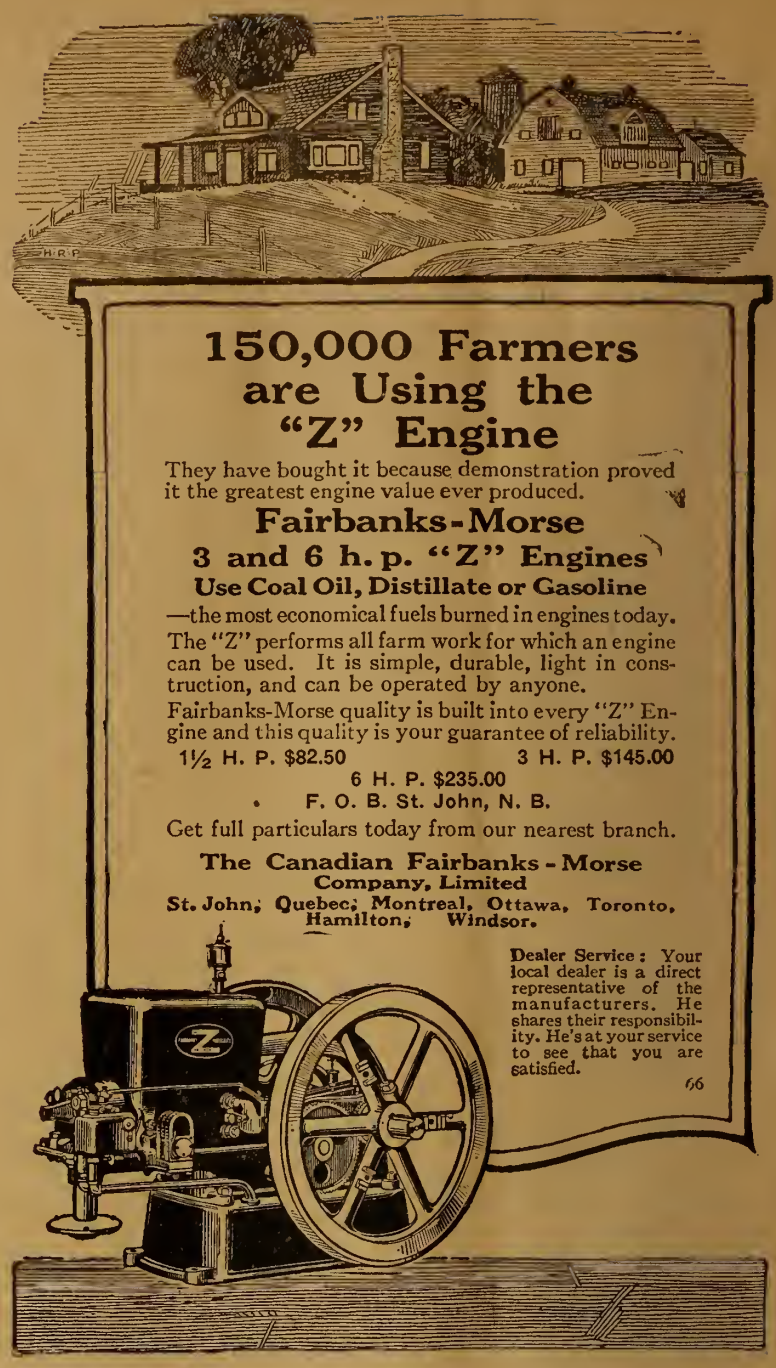
Gapes is easily prevented if a few simple conditions are met, but in sections where the disease is prevalent halfway measures will be of little value. It is most common on heavy soils, especially limestone, and practically unknown on sandy soil. The trouble is caused by small worms that get into the windpipe and cause death by suffocation. These worms are hatched from eggs of the mature gape worm, the eggs being picked up by the chicks and swallowed, when they soon hatch out in the digestive tract and make their way through the tissues of the body until they reach the inner surface of the windpipe, where they attach themselves. They grow to full size there, at which time they present the appearance familiar to every one who has used the horse-hair method of extracting them. At this stage the worms are mature and the females are filled with fertile eggs. When they are coughed up or the chick dies the worms also die, but the eggs stay in the ground until the next season, if they are not picked up before. It is believed that the common earthworm or "fishing worm" is the chief means of conveying the eggs from the soil to the chicks.

It should be clear from this that the way to prevent gapes is to keep the chicks away from infected soil. Burning the dead ones is good; sprinkling the ground, especially all bare spots, with air-slaked lime also is good; keeping the coops and runs clean and sweet is important; but the only way entirely to prevent gapes is to keep the chicks away from infection.

There are two practical ways of doing this. The cheaper and better one is to have two yards of nursery plots of sufficient size on which the chicks can be brooded on alternate years, the vacant yard being devoted to some crop—grass is best, as it leaves a sod for the chicks to run on. During the off year this yard must not be used for poultry at any time—either young or old. If this is done there will be practically no infection the second year, chicks can be raised alternately on these two plots with practically no losses from gapes. After the chicks are four or five weeks old they may be allowed to run at large, as they will then be safe from infection, or if infected they will be strong enough to cough up the worms and will not be injured by them.

The other way is to confine the chicks continuously indoors until they are four or five weeks old. A permanent brooder house where they will be comfortable and will have plenty of room is bets for this, but many farmers are able to utilize an empty mow or some vacant building of sufficient size, and wtih proper care and feeding can do this with entire success. The only essential is to keep the chicks away from the infected soil and where they will have no opportunity to pick up worms until they are old enough to throw off infection.

Where it is impossible to do either of these things, the next best plan is to confine the chicks to a comparatively small yard and use air-slaked lime lavishly, raking it into the soil so as to avoid injury to the tender feet of the chicks. Do this not once but several times during the breeding season. This will very materially reduce losses. When chicks have gapes many can be saved by the use of a twisted horsehair or better still a wire gape extractor, such as can be secured from almost any poultry supply dealer. There are various advertised remedies that are more or less effective.



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Some average figures on yields per acre and cost per bushel, taken from farm accounts of Maine farmers from all parts of the state:

	Yield in bu. per acre	Cost per bu.
Corn	53.60	$1.62
Oats	31.11	.85
Barley	20.30	1.70
Buckwheat	14.00	1.86

The last three grains listed also furnish a large amount of valuable straw that can be used for litter.

Compare these figures with the prices you are paying now at the grain dealer's. Subtract the value of your straw and the cost of hauling your grain from the dealer's to your farm. You will find a very favorable balance on the side of the home-grown scratch grains, I feel sure.

Barley, oats and buckwheat can be grown on every farm. An excellent scratch grain can be mixed from the above grains. For example: 100 lbs. barley, 100 lbs. cr. corn, 100 lbs. oats, or 100 lbs. cr. corn plus 100 lbs. oats, or 100 lbs. oats plus 100 lbs. barley, plus 50 lbs. buckwheat, etc. Decide now, poultrymen, what your scratch

grain will be for next year, and plan your grain acreage accordingly. Remember that you are feeding by weight nearly equal parts of scratch grain and mash. If you raise one-half of your hens' feed on the scratch grain, you will be doing a big bit to help out the feed situation.

Poultry is a necessity on the farm, eggs are the highest even known, poultry meat is high. Farmers must maintain poultry production by raising home-grown scratch grains. Remember, food wins the war. Do your part.

John S. Carver, Poultry Specialist.

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HEAD LICE IN CHICKENS

The chicks sould be gone over for lice—the head lice are the worst. If the brooder and the surroundings are kept clean as possible there should not be much fear of head lice. Should they appear, however, an application of ointment of some kind should be used at once. If this is not available, use vaseline, olive oil or sulphur and lard. Every head will have to be gone over and treatment will have to be repeated in a week. . tI is a troublesome task to go over several hundred young chicks, but it must be done, each head by itself. Rub the paste well into the scalp and around the ears. Some use coal oil, but it is too severe and has been known to kill the chicks about as quickly as lice. Head lice are hard to locate in chicks sometimes. The chicks may be listless, getting thin, wings down, feathers ruffled, and dying off one by one. Upon examining the heads one can see nothing running around and all that appears is what looks like young feathers sprouting out of the head. To make sure that they are there, take some of the ointment and aply thoroughly to the head. Put the chick in a box and examine in a few minutes time. The young feathers will be gone and large bodied lice will be running for their lives. The feathers were abdomens of the lice, the head and the rest of the bodies being buried into the head of the chick eating away at the tissue. It takes only a few days to have a whole flock cleaned out. Absolute cleanliness is the best preventative.

WHY CHICKS DIE IN THE REARING

The life of the chick is dependent upon the parent stock as well as upon the method of incubation, and finally upon the method if brooding. A fine lot of vigorous chicks may be hatched from eggs from the best stock, and through improper methods of brooding totally unsatisfactory results may be secured.

The main thing in brooding is the temperature. Little chicks three or four days old are fairly hardy creatures, but when placed under extreme conditions weakness or death is sure to follow. The chick's lungs are situated along the spinal column, and are protected only by a thin membranous lining over which a light covering of feathers grow. Provided with such meagre protection the lungs may become readily chilled or overheated. An even temperature in the brooder, with as little variation as possible, is most desirable.

The brooder should be started a day or two before the chicks are to be placed in it, so that an even temperature of about 98 degrees may be maintained. This temperature should be gradually lowered, and it depends upon the season of the year just how much it should be lowered. The poultryman must use his own judgment and operate the brooder according to the condition of the chicks.

Another problem second in importance to temperature is that of foods and feeding. Just as the little chick is hatched, the remains of the yolk are withdrawn bodily into the cavity. The food contained in this absorbed yolk-sac provides for the chick's sustenance unti lit is able to obtsin food by its own efforts. It is due to this provision that it is not wise to give it any food for about fifty hours.—M. A. JULL, Macdonald College.

REARING CHICKS TO VIGOROUS HEALTH

The perid of brooding chicks with hens or with artificial brooders depends upon the season of the year. In the early season, or if it is cold or damp dufring the normal brooding season, the chicks will re quire to be brooded for a longer time than under normal conditions, which usually lasts from eight to ten weeks.

The direct object in the treatment of the growing stock is to promote normal growth. Uniform development is necessary to insure satisfactory results. Chicks of the same breed vary greatly in size and vitality and it is wise to kill off all weaklings at hatching time. As the chicks develop, the weaker ones should be eliminated from the flock. A rigid system of selection should be carried out from hatching time to maturity and all chicks lacking in vigor should be killed. A good time to weed out the weaker chicks is when they are about eight or ten weeks old. These should b eplaced by themselves and in some cases can be fattened profitably. With the rest of the flock the aim should be to keep them in the best possible state of health and growth.

To thrive well they must be given plenty of range on clean soil. As for as possible, avoid raising the chicks on the same ground year after year, since the land on which chicks are raised continually without cultivation soon becomes dirty and is liable to cause sickness and disease among the ffocks.

Overcrowding the chicks on a small are a of land will cause much trouble during the growing period. Plenty of range tends to make the chicks more vigorous and will lessen the cost of feeding. Where the chicks are allowed to run in the orchard or cultivated fields on the farm they are able to feen on many worms, insects and other material. They will also get plenty of green food which is so esential in the successful raising of chicks. The cultivation of land on which the chicks are being raised tends to keep the soil sweet and clean. Chicks on free range can obtain much mineral food wihch assists greatly in their proper development.

Growing chicks require plenty of shade. The orchard will supply plenty, or if the orchard is not available the chicks should be raised on land where crops are grown. The corn field makes one of the best places for the young stock. —M. A. JULL.

POULTRY POINTERS

A young turkey is like a cat; its power of recuperation is remarkable. You are never sure that it is dead. They can often be picked up to all purposes cold, inert corpses, and held in the hands and warmed, and then comes a gasp and a return to life, and the bird is quite ready for brakfast the next morning.

There is little use trying to keep turkey chicks on a limited range. They love to walk and also to roost in the open. The turkey hen is an ideal sitter, but a bad mother unless confined, as she drags her young after her, and does not wait for those that fal out by the way so long as one is left.

Growing ducklings thrive best on a feed composed of equal parts, by measure, of corn meal, ground peas, bran and middlings, all made into a thick mash, either with scalding hot water or milk, the latter being the best. The mash is improved by adding short-cut green stuff, and a few handfuls of coarse sand.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B., solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's or-ganizations.

GET THEE BEHIND ME, SATAN!

(Continued from last issue.)

"And shame the devil," said the little manager. There were tears of sympathy and understanding in her blue eyes.

She helped Miss Cornelia to her feet, but Miss Cornelia suddenly gasped and sank backward—

"The—matron!" she whispered, and her face, with terrified eyes, was turned to the door.

Outlined against the distant hall stood the manager in blue, her eyes hard and unforgiving, and by her side in her new black silk with the white ruche about her thin throat stood the matron, weary, miserable with headache written in little lines of pain above her bent brows. Her glance, traveling down the crowded room, found Miss Cornelia. Impressively she made her way toward her. When she got within speaking distance, she stopped, lifting a thin, nervous hand—

"Miss Cornelia," she said heavily, "I have been most surpricsed and pained by your actions—we will not discuss the matter—you will kindly return to your room." She swept her pained glance about among the guests as if here were a sample of what she bore with a martyr's fortitude, for fifty-two weeks in the lagging year!

Miss Cornelia for just a moment went blind. She rose to her feet, staggering a little, and tried to speak, but her tongue clove to the roof of her mouth—Miss Cornlia, deserted at last by even the Evil One, could not utter a word! And then slowly, guided by some one, she went down the long flower-decked room, past the table with its blurred glitter of cnadles, past the Paris gowns, that looked like ghosts with the bodies missing, past the gold lorgnettes, and the frigid shocked faces, straight to the green baize doors. It was Miss Cornelia's way of crucifixion, and she walked with a little prayer on her lips, for Miss Cornelia had said good-by to the Evil One forever!

I think, between you and me, he was sorry to say good-by to Miss Cornelia. You see, he knew at that very moment that two irate old women were waiting before Miss Cornelia's locked door—he wanted to see just what they would say when she appeared in the clothes she had no right to—the real lace jabot and the plum-satin gown! So he raced ahead of Miss Cornelia and found a place to hide in, in other words, he glared out at her from Widow Brown's cold eyes.

"So deceitful," she began as the culprit came nearer, "co awful common and bold—to go down decked in other folks' finery and we trusting you with the best we had on earth! Just look at the creases where you sat on it—and dribbles of ice cream on that tucked breadth. My lands, I call it being a whited sepulcher—singing hymns in chapel on Sunday, and consorting with the devil the rest of the week!" By this time the widow's fluency gave out and Mrs. Parker took up the theme.

"My goodness, Cornelia—you gave me a turn, you did! I suppose you put pin marks all thro' that lace! And talking about your cotton crochet! I should think you'd be ashamed to tell lies like that at your time of life!"

"I am ashamed!" quivered Miss Cornelia.

"And dangling about in Nancy Huggins's earrings—if I was Mis' Huggins I'd cut you dead, that I would and feel no sualms to my conscience!"

Miss Cornelia clasped her trembling hands together. "I'm sorry," she murmured, "oh, I' msorry—"

"And the Lord don't ask no more of us, Cornelia," said some one cheerfully. It was Nancy Huggins coming down the corridor.

Don't speak to her—the deceitful wretch," gasped the widow. "Look at her! wearing your carnelians as if htey'd been handed down in the family! And strutting about among the lady-managers, while the rest of us were cooped up here doing our dooty. Don't tell me that Satan han't got into her!"

Nancy Huggins looked serenely at the Widow Brown's darting eyes. "Well," she said, "Mis' Brown, we all know he goeth about as a roaring lion devouring his prey, and I will say I've met him right here, in this corridor, and one of the first signs of him," said Nancy evenly, "is a hasty tongue. You just count twenty before you say another word to Cornelia, and I bet it will be a kind one. As for Cornelia—I'm not upholding wrongdoing, but from the look of her, she didn't have a good time while she was doing it—she's clean tuckered out. I think," said Nancy wisely, "we're all of us too near the borderland to squabble. As for scolding—the Lord has his own way of doing that, he don't need your tongue or mine to help him! Now you come along with me, Cornelia, and I'll help you get off that toggery. No—Mis' Brown—you better stay outside, I'll hand 'em to you through the door." Miss Cornelia, like a little child, followed her.

The stately person tapped with her gold lorgnette upon the back of the secretary's chair. "It is very distressing," she said, "but there seems to be only one course open to us!"

The matron, still bearing traces of headache, stood facing the Board. They were in the managers' room, three days later, and the green baize days were closed. "I hope," she said miserably, "the ladies uphold my attitude. I have tried to be disciplinary, not severe. I have kept her in her room and denied her desserts and visitors until your honorable Board should come to some decision."

The president bowed. "Certainly, Mrs. Marter—we understand exactly. Your position is bound—ahem—at times to be trying. The whole affair is very distressing."

A youthful-looking manager in a ragish little hat twined with roses, smiled broadly. "It's distressingly funny, I think," she said.

"To think," murmured the stately person "that we were all so taken in. So very mortifying! Miss Twitchell, indeed—we might have realized she wouldn't have come in such an antediluvian get-up!" Here the stately person actually snorted.

The matron put one blue-veined hand to her brow and kept it there.

The president rose. "That will do Mrs Marter, thank you" The Board will act at once" She opened her watch—"In ten minutes please see that the inmate is sent here to us."

A manager at the end put a question. "Just how," she asked nervously, "will we put it?"

"As briefly as possible. There are only two courses open to us. Retention with reprimand, or expulsion."

"Oh," murmured the soft-hearted manager. She had peen biting the end of her pencil for the last five minutes. Suddenly she rose. "If I am not interrupting the Board," she said hurriedly, "I would like to say a word. We must remember that they are just dear old babies, all of them, and you can't scold babies the way you can other folks—I know, because I've two of my own at home. Besides, she told us several things that were true. Of course I know we couldn't provide pocket money and things like that, but I want to say—" here she blushed vividly, "I want to say that Teddy, my husband, I mean—gave me a hundred-dollar check for the Home this morning and we both wish it to be used for ice cream on Sundays as long as it will last!"

There was a distinct silence. The president, broke it. "That is very sweet of you, Mrs. Foster, very—and I think, although it seems like putting a premium on—on crime, that the Board will not object. Personally, I think ice cream is harmful to old stomachs and we need new hymn books in the chapel, but as it is your gift, of courseJ"

"It is Teddy's gift," said the little manager bravely, "and it for ice cream—nothing else."

The president flushed. "We will proceed to the matter in hand," she said shortly. "'Ladies, will you vote at once?"

The secretary counted the votes. "There are seventeen," she said, "for expulsion—the majority by one."

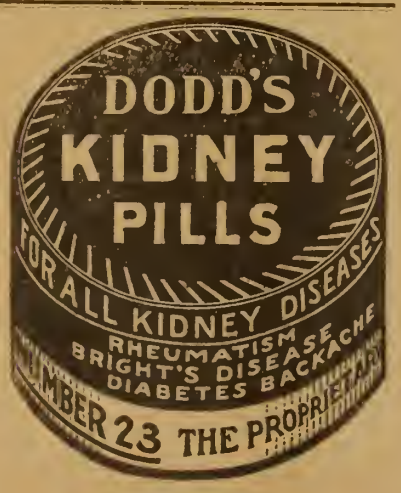
"Oh—" whispered the soft-hearted manager, and subsided mournfully into her seat, while her eyes did a rapid counting.

It was just here that the doors swung wide to admit a white-faced, frightened little old lady with red-rimmed eyes who stumbled as she crossed the threshold. Her eyes, traveling pitiously around the room fuond the manager with the soft heart and rested there.

There was a pause. The president, rising, spoke slowly. "It grives us very much," she said, "I speak in the name of the whole Board, to have to communicate to you our painful decision. We try to make our Home a pleansant one, but it is established upon rock-bound rules, and principles of honor and rectitude. Your defection has been so great—that we feel it necessary to make an example to others—to, in fact, to send you from us, Miss Cornlia.

Miss Cornelia swayed a little. She wondered why the room persisted in turning around, and why the light of the windows shifted so—

Suddenly the soft-hearted manager frowned and found her clearest, most



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bell-like voice. She leaned forward a little. "Excuse me," she said very distinctly, "excuse me Madame President, but the secretary has dropped two papers. One of them is under the table—the other is here by my chair."

The secretary stared, stooped, fumbled. "Very careless," she murmured, "I have on my wrong glasses—I didn't see. Yes, two votes. This makes, I find, a—a difference—if you will allow me to count again."

She laid them separately out upon the table, while the soft-hearted manager waited, tapping her little foot on the floor. The secretry looked up with flushed cheeks. She must either accuse a member of the Board of—of cheating, or accept the altered verdict. She decided to accept the verdict. Only she knew what nobody else would dream of—that the manager with the soft heart had voted three times!

"As it stands now," she said steadily—it is retention—with reprimand."

"Miss Cornelia," said the president, it seems you are to stay with us a little longer. Have you anything to say?"

Miss Cornelia made a little movement forward her eyes were swimming with tears. She clasped her hands together in the old childish fashion.

"Only that I am glad," she said, "because it is—my home!"

Miss Cornelia turned her blue eyes timidly on the sea of faces; it was surprising how, all in a minute, they had grown kind. Some of them were tear-wet, like her own, some of them were smiling, but out of them all the face of the little manager shone brightest, and Miss Cornelia, watching her intently, suddenly knew why.

THE CHILD'S EARS

(By Gertrude Crownfield)

A deaf child is a most pathetic little creature. If his defect is not discovered early, he is apt to be misunderstood and blamed for inattention, disobedience, and stupidity at home and at school.

Much can be done to prevent deafness, if done in time.

Earache is usually the first danger signal.

Many parents accept it as an almost necessary evil. On the contrary, an attack of earache should arouse instant attention.

A stopped or "queer" feeling in the ears is just as dangerous as pain, for it shows a blocking of the Eustachian tube that lead from the throat to the inner ear.

Often, children, too young to speak, will whine when the ears are touched, put the hand to the ear in a nervous way, or roll the head from side to side as if uneasy.

Sometimes the child will be cross and fretful for several days, when suddenly there will be a flow of pus or watery fluid from the ear, showing that there has been inflammation of the middle ear, with perforation of the drum membrane. Such perforations often heal; but if the cause of the inflammation is not discovered and removed the condition may become chronic, or other acute attacks may follow, the drum may thicken, and in time the child may become partly if not totally deaf.

It is always a suspicious sign to see a child turn one ear more frequently than the other to the speaker. Every child's hearing should be tested now and then by speaking to him from an adjoining room, from back of him, and from the side, at a reasonable distance from him, and using an ordinary tone of voice, saying something that you are sure he would like to hear.

Middle-ear inflammation is at the root of most cases of deafness. It may come from various causes, among which are scarlet fever, influenza, measles, whooping-cough, diptheria, mumps, typhoid fever, injuries to the ear, bad teeth, adenoids and tonsils.

Violent coughing or vomiting in whooping-cough may rupture the ear-drum, or drive infectious germs, or even food, into the middle ear, and set up serious inflammation there. it may also give rise to hemmorrhage in the ear. An attack of pain in the ear during whooping-cough requires the prompt attention of a physician.

Adenoids should be removed, and swollen tonsils attended to, because they keep up a constant irritation and inflammation of the mucous membrane of the nose and throat which spreads to the ear.

The same condition arises from coughs and colds; and a child suffering from either needs to be taught not to sneeze or cough violently, or more often than can be avoided. Teach him to blow his nose gently with both nostrils open. Nasal douches are dangerous, and should never be used.

Surf beating on the ears, ducking or diving, has sometimes broken the ear drum, or if it was alreday ruptured, it lets the salt water directly into the inner ear, which is apt to become infected by it.

Never box or pull a child's ears in play or as a punishment.

There is a great danger of middle-ear inflammation extending to the surrounding parts, producing mastoiditis, meningitis, or brain abscess; or a general poisoning may take place from the pus being absorbed into the system.

A hot-water bag, salt bag, or hop pillow, furnishing dry heat, are the only means that should be employed

The ENTERPRISE
MONARCH STEEL RANGE
SAVES TIME—FUEL—LABOR
Sold by Leading Dealers Everywhere
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The ENTERPRISE FOUNDRY CO. SACKVILLE, N. B.

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Summer Packs
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You can't enjoy farm labor with tired, aching feet. So, boys, slip your feet into Palmer's Summer Packs. Made from durable yet soft, pliable, oil-tanned, Skowhegan waterproof leather—the ideal farm shoe for comfort and wear.

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Ask your dealer to show you "Moose Head Brand"

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35

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YOU need a Bicycle NOW as never before. Help is scarce. Feed for the horse is dear. The most sensible and the cheapest means of getting there and back is a "C.C.M." Bicycle—the best that money can buy. Useful in a thousand ways on the farm. No cost for upkeep.

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Canada Cycle & Motor Co., Limited,
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MADE IN CANADA
This Mark is Your Protection.
Every "C.C.M." Bicycle bears this design on the rear upright.

Look for these Nameplates when choosing a Bicycle. All of these well known lines are "C.C.M." Bicycles, 2-E

Twice as easy as walking-Three times as fast

WEAK AND NERVOUS

AFTER

SERIOUS OPERATION.

After any serious operation or sickness, the nervous system is generally left in an extremely weakened condition, and a course of Milburn's Heart and Nerve Pills will do more towards building it up than anything else.

Mr. W. E. Grafton, 44 Davenport Road, Toronto, Ont., writes: "My wife underwent a very serious operation three years ago. After leaving the Toronto General Hospital she was in a weak, nervous condition. Having tried numerous medicines, from which she received practically no satisfaction, I decided to try Milburn's Heart and Nerve Pills. I am very pleased to say that they proved very satisfactory. She slept and ate well, and her whole physical condition improved wonderfully. I have always kept a box in the house, and find them very useful in cases of nervousness, sleeplessness and fatigue."

Milburn's Heart and Nerve Pills are 50c. a box at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

to relieve pain in the ear. Be sure that these bags are not so full as to be hard to the ear. Drops of all kinds, poultices, and all moist applications should be shunned.

If there is a discharge from the ears and the doctor orders it to be irrigated with a fountain syringe, be sure that the bag is suspended not more than two feet above the ear, to that the fluid may flow in very gently. Hold the nozzle one-quarter to one-half an inch from the ear opening, so that the fluid may have a proper chance to return; otherwise it may do harm.

For several weeks after an attack of middle-ear inflammation, extra caution must be used about exposing the child to the weather, or allowing him to become overtired. If his ears are at all sensitive, bits of cotton should be placed in his ears before going out.

If beans, peas, seeds, beads or other objects get into the ear, do not make frantic efforts to get them out. No harm will be done by leaving them in for some hours, or even days, if necessary, in order to get a doctor. Almost without exception the real damage is done by unskilled efforts to pry out the objects.

The end of the towel must not be rolled into a hard point to dig out dirt and wax from the ear canal. Wax is especially provided to keep the inside of the ear canal and the drum in good condition. It is in no sense dirt, and only so much of it should be washed away as rolls into the outer ear, and can easily be removed by a damp cloth stretched over the tip of the little finger.

If insects fly into the ear canal, a drop or two of sweet oil will smother them at once, and they can then be removed by gently syringing the ear with a mildly warm boric acid solution —two teasponnfuls of boric acid powder dissolved in a half-glassful of warm water. Use a syringe with a tip too large to enter the ear canal and hold one-quarter of an inch from the ear opening. Never use picks or pincers to extract anything from the ears.

In case the child becomes deaf, and the specialist is unable to restore the hearing, the question of having him educated in an institution for the deaf should at once be carefully considered.

In such a school the child is given a good general education, is taught a trade at which a deaf person can easily support himself, and special care is given to retain what ability the child has to talk (and a child whose hearing is seriously impaired will certainly forget how to talk.)

In addition, the child, if bright and intelligent, will be taught lip-reading. It is remarkable how many deaf people there are who can carry on a conversation by means of this art.

The younger the child begins this training the more thoroughly will he master the details of it.

Had Piles For Ten Years

And Tried Nearly Everything Except a Surgical Operation Without Obtaining Relief. — Tells How Complete Cure Was Effected

There are reported here three cures of chronic cases of piles. In all three cases many treatments were tried before it was discovered that Dr. Chase's Ointment is about the only real cure for this distressing ailment.

Mrs. A. Oates, 22 Gilkinson street, Brantford, Ont., writes: "I have used Dr. Chase's Ointment as a household remedy for ever so long, and am particularly indebted to it for a cure from Piles. I had suffered from this annoying trouble for ten years, and tried nearly everything I heard of. After using Dr. Chase's Ointment a short while I was completely cured."

Mrs. Wm. Shantz, 155 Albert street, Kitchener, Ont., writes: "For several years I was troubled with bleeding piles. I tried different remedies for relief without success. I read in Dr. Chase's Almanac of the benefits other people were receiving from Dr. Chase's Ointment, so Isent to your office for a sample box. I found it gave me such relief that I went to a drug-store and purchased a full sized box. I have used several boxes since and have derived more benefit from its use than any remedy I have ever used.

Mrs. F. Cussons, Victoria street, Ingersol, Ont., wirtes: "About two years and a half ago I was suffering from Piles. I had tried many different remedies for this distressing trouble, but nothing helped me. Finally I got a box of Dr. Chase's Ointment, and after using it found that I was completely cured and have not been bothered in this way since. I can cheerfully recommend Dr. Chase's Ointment to anyone suffering as I did."

Dr. Chase's Ointment, 60 cents a box, at all dealers or Edmanson, Bates & Co., Limited, Toronto. There are no rivals to Dr. Chase's Ointment as a treatment for Piles.

CHEESE INSTEAD OF MEAT

Cheese is a neglected article of diet, declare nutrition experts of the Department of Agriculture. As a rule, it is more often used as a mere appetizer than as a major article of diet. A pound of cheese, experts declare, supplies more than twice as much energy as a pound of fowl or roundsteak, and almost twice as much protein as the same amount of fowl or ham. Cheese therefore, it is pointed out, is an economical and satisfactory meat substitute.

Mayor Mitchell said at a dinner in New York:

"Insurance rates, now that we're at war, will naturally go up. I heard the other day about a young fellow who went to an insurance agent and said:

" 'I' dlike to take out a policy, please.'

" 'Very good, sir' said the agent. 'Sit down and have a cigar. Now then, what kind of a policy do you want to take out—life, fire, burgulary, accident, murder, drowning, assassination or marine '

" 'I'll take the whole caboodle of them.' said the young man. I,m going to try to cross to England through the U-boat blockade.' "

DRIED PEACH CUSTARD PIE

1 Cupful Dried Peaches, Cooked
Sugar to Taste
Rind and Juice of 1 Lemon
2 Eggs
Cinnamon or Nutmeg.

Stew the peaches and mash to a pulp. To one cup of peaches add the well-beaten egg yolks. Sweeten and add a pinch of cinnamon and a dash of nutmeg; lastly, grate the rind of the lemon into the mixture. Squeeze half of the juice into the custard, saving the other half for the meringue, which is addcd after the mixture has been allowed to cook for a few minutes to set.

This same recipe is excellent for dried apple custard, or to use for fresh apples. With the apples, substitute vanilla flavoring for the lemon. Dried fruits make better custards than fresh, and the dried fruits need much less sugar. In fact some dried fruits require no sugar at all.

SYMPATHY WITH CHILDISH SORROW

There are many mothers who do not realize how real is the grief of a child. If a little one breaks a toy and comes to you with tearful eyes and quivering lips to tell of the loss, do not turn away carelessly or impatiently, but speak some comforting word, for the little heart is aching over the loss of this cherished plaything, and the sorrow is just as genuine as any you have felt.

The little one has come to you for comforting cheer in this hour of childish sorrow, and if you would retain its confidence, heed these little things which are big things to your child, so that in later years when real sorrow may come into his life, he will turn naturally to mother for help and comfort. Your child turns to you as naturally for sympathy in joy and grief as does the flower to the sun; then see that in return you give your sympathy and help, or in after years this child, to boyhood or girlhood grown, will go to another for what you have failed to supply. Can you trust anyone else with that child's interest and welfare? It is yours, placed in your hands to rear for weal or woe. No one can understand your child as you should be able to, for no one has made of its life and temperament a study as you have or should have done. Keep this confidence of your child, as you have its best interests at heart. If it does not come to you with its little pleasures and griefs, its childish secrets, be sure there is something wrong, and in yourelf. Find where and in what you have failed, and set it right at once while you can, or some day you may be sorrq. Your child will know in its heart that mother has failed him. Think what that means to you—failure as a mother. Is there any trouble too great to prevent this happening? Is the keeping of your house, society, or anything more important to you than being a good mother? Do not for peace of mind's sake in later years, let anything come between you and your duty to your child.

HOW TO MAKE HOME ATTRACTIVE

There is such a thing as throwing around the home so many beautiful things. I do not mean beautiful in art to catch the eye, but beautiful in thought and association as to hold the heart, that children will cling to it with undying love.

The complaint is often made by parents that as soon as their children become old enough to mingle in society, their home is forsaken. They become uneasy and restless when compeled to remain even for a single evening in the home, and almost any other place seems to be preferred to that where father, mother, brothers and sisters are found.

This complaint is made with a tone of deep regret, but at the same time perhaps, the parents who make it have no suspicions that, after all, the cause of what they depricate is found in themselves. "Diving and finding no pearls in the sea, blame not the ocean, the fault lies in thee."

No child, however sentimental, will love a home simply because it has the nome of one. If we would have our children love it, we must make it lovely; we must give them something to love in the home.

Now if the principal ideas which a child has of its home are that it is a place where to get his meals, where to sleep; where if he is little he is perpetually found fault with; where he must be quiet; where at nightfall he must sit stupidly waiting 'till bed time ; or if he has grown older he can only deem it a dreary room in which he must employ himself as best he may, while the father sits at his paper or doses in his chair, and the mother is silently busy with her sowing or her book. If such be the aspect of home, one need not wonder that children learn to look elsewhere for pleasure, and seek to find amusement in theatres and questionable places.

Let the table be the happy meeting place of a merry group and not a dull board where a silent, if not sullen, company of animals come to food; let the meal be the time when a cheerful laugh is heard, and good things are said; let the sitting room at evening be the place where a smiling company settle themselves to books or games 'till the round of goon night kisses is in order.

Let there be some music in the household; music not kept like silks and satins to show to company, but music in which father, mother, sister and brother can join.

Let young companions be welcomed and made for the time a part of the group, so that daughter sshall not deem it necessary to seek the obscurity of back parlors with intimate friends, or to drive father and mother to distant apartments.

In a word let the home be surrounded by an air of cosy and cheerful goodwill; then, children will not be exhorted to love it—you wil not be able to tempt them away from it.

SKIM MILK'S VALUE AS HUMAN FOOD

Skim milk has been looked upon as an inferior article of human food and has been mostly used as a food for stock. It is without question a most valuable food for young pigs and calves, and is abolutely necessary for their growth and development. There, is, however, a large amount of skim milk fed to mature hogs which could be used to advantage as human food.

Skim milk contains practically all of the constituents of whole milk, except the butterfat. It contains the sugar, the protein, the albumen and the mineral matter, also the substance called vitamines, which has been found to be absolutely necessary to the growth and health of the human body.

tI is not the aim of this article to advise the substituting of skim milk for whole milk, for we all know that the butterfat is the most valuable part of the milk, but the skim milk will do just as well in the making of batters for bread substitutes and where there is a sortage of whole milk. It might be well during this time of food conservation, for people to make a more general use of skim milk in the home.

At the Yarmouth Y. M. C. A. Boys' Camp, held at Tusket Falls in August, I found MINARD'S LINIMENT most beneficial for sun burn, an immediate relief for colic and toothache.

ALFRED STOKES,
General Sec'y.

RINKTUM DITTY

4 tbsp. flour.
2 tbsp. fat.
1 cup tomato juice or mik.
1 cup milk.
1½ cup cottage cheese.
1 egg if main dish at meal.

Make a white sauce of flour, fat, milk and tomato juice and stir in the cottage cheese or American cheese. Serve on toast or wafers for lunhceon or supper.

SAUSAGE

part lean beef.
1 oz. salt.
2 parts pork.
1 oz. pepper.

Sprinkle seasonings over meat and put through food chopper. The amount of seasonings give nabove are for four pounds of meat. If the meat is packed in muslin bags and hung in a cool dry place it will keep for a long time.

CORN FRITTERS

To one can of corn add 2 eggs well beaten, 2 tbsp. flour, 1 tsp. salt, ½ tsp. pepper. Mix thoroughly. Have pan hot, grease with 2 tbsp. lard, and drop the mixture in spoonfuls. Brown, turn, serve hot.

PASTRY

1 c. middlings.
¼ tsp. salt.
4 tsp. butter
½ c. pastry flour.
4tbsp. lard.
Water.

Sift flour and salt, cut in lard, add cold water. Roll out mixture and add butter in small pieces. Fold and roll. This amont is sufficient for two shells.

RAISIN PIE

2 tbsp. flour.
1 c. water.
¾ c. sugar.
1 c. raisins.
Juice and grated rind of one lemon.

Mix sugar and flour, add water, lemon rind and raisins. Cook. Add juice of lemon This may be baked in crust with strip across top or put filling in baked crust, dot with meringue. Decorate with plump raisins.

KOL DORMER

Grind 2 lbs. steak or cheaper meat through food chopper with 2 slices salt pork; add 1 c. boiled rice; ½ c. milk, 1 tsp. salt, pepper. Chop 1 onion and brown it lightly in 2 tbsp. drippings. Add to the meat, mix together and make into little rolls 4 in. long and 2 in. thick. Take as many cabbage leaves as rolls, drop them into a pan of boiling water and let stand until they are wilted. Place roll of meat on leaf, roll up and tuck in ends neatly. Lay in greased baking pan, cover closely and bake in moderate oven 40 min., basting frequently. Serve hot.

STEWED POTATOES

6 potatoes.
3 tbsp. butter.
Water.
Salt and pepper.

Wash and pare potatoes, slice, cook until tender, let water simmer away. Season with salt, pepper and buttter. This is a quick way of cooking potatoes. Onion may be cooked with potatoes.

WAR-TIME BREAD PUDDING

¾ cupful Corn Sirup or Brown Sugar
Grated rind ½ orange.
1 cupful ground bread crumbs.
½ teaspoonful salt.
1cupufl boiling water.
½ cupful raisins.
1/3 cupful shredded dates.
3 cupful milk.

Pour the boiling water over the crumbe. Combine the other ingredients and bake in a buttered dish an hour in a moderate oven. Honey or maple sirup may replace the corn sirup.

They all come out of the "BEAVER" FLOUR Barrel
Apple Pie and Hot Rolls for supper—Jelly Roll and Chocolate Cake and delicious homemade Bread for dinner —Puddings and Doughnuts, and Cookies and Raisin Bread — all at their daintiest and best when made of
BEAVER FLOUR
T.H. TAYLOR CO.
BEAVER FLOUR
MILLED OF BLENDED WHEAT
"Beaver" Flour is just as good for Pastry as for Bread. It is the product of Ontario winter wheat, blended with western spring wheat to increase the strength.
"Beaver" Flour has the best qualities of both kinds of wheat—the whiteness, lightness, delicate flavour and perfect Pastry making qualities of Ontario winter wheat—coupled with the extra strength of western spring wheat.
Being scientifically blended in exact proportions, the blended wheats are always the same in strength and quality—and so is the flour.
If you have never tried a blended flour, you cannot imagine what a difference there is between "Beaver" Flour and the usual western spring wheat flours. Get a sack of "Beaver" Flour at your dealer's, and try it for yourself.
DEALERS—get our prices on Feed, Coarse Grains and Cereals.
198
THE T. H. TAYLOR CO. LIMITED, - - CHATHAM, Ont.

COFFEE TAPIOCA

1 cupful strong coffee.
2 cupfuls hat water.
6 tablesponnfuls condensed milk.
Few grains salt.
½ teaspoonful vanilla.
¾ cupful quick cooking tapioca.
½ cupful broken nut-meats (optional.)

Combine the condensed milk with the hot water and coffee, add the salt, and when boiling stir in the tapioca. Let cook over hot water until the latter is clear, then stir in the nut-meats and vanilla, and pour into individual molds which have been dipped in cold water. Unmold and serve with top mlik.

BREAD-CRUMB MOLASSES CAKE

3 tablespoonfuls butter substitute.
¾ cupful boiling water.
1 cupful molasses.
¾ teaspoonful salt.
1 teaspoonful soda.
2 teaspoonfuls powdered ginger.
¾ cupful fine dry bread crumbs.
1 cupful Rye flour.
½ cupful ground raisins (optional.)

Combine in the order given, beat well and bake as a single cake or individual cakes, in a slow oven, from thirty-five to forty minutes.

INDIAN DATE PUDDING

Bring one pint of milk to the boiling point. Add one-fourth cupful of corn meal and cook until thick. Add one teaspoonful of butter, one-fourth cupful of sugar, one-half cupful of dates cut in small pieces, two well-beaten egggs, and one-fourth teaspoonful each of cinnamon and salt.

Mix well and bake in a buttered pudding dish in a hot oven until firm. Serve hot with lemon sauce.

RHEUMATISM AMONG YOUNG CHIDREN

Rheumatism is becoming quite prevalent amang children, and it is a subject of vital interest to mothers. Its importance cannot be over-estimated, because, in the first place, rheumatism in children so often goes unrecognized its existence not often being thought of until it has produced untold injury to the heart.

Again, neglected and improperly treated rheumatism in a child in most cases results in a state of chronic invalidism for the remainder of life. In rheumatism affecting children, there is one organ which receives the brunt of the attack. It is the heart, and it may be left with a scar which never heals, so weakening it that it easily breaks down under the least added strain.

If there is one disease in childhood a mother should use every safeguard to protect her child against, it is rheumatism. One might easily point out as peculiarities of rheumatic fever in There will be a comparatively mild inflamation of the joints. There is in practically every instance involvement of the heart. And what is perhaps of the greaest interest is the fact that ofttimes i nchildren the heart involvement will be the only symptom of the attack. Rheumatism in children often starts with the heart being involvtd as the first and only symptom. Rheumatism in children always has a tendency to recur, and each succeeding attack only adds a greater injury to the heart.

"What does one raise when he sows wild oats?" asks a correspondent. Well, we know one young man who raised cheques. And his crop led to a close crop in the State's prison.

If You Ever Want Credit

at a bank or elsewhere, the fact that you have built up a substantial Savings Account will help you get it.

The capacity to save regularly indicates the quality of character that justifies credit.

Decide, now, to let us help you to save. Interest paid every six months.

Paid up Capital	$ 6,500,000
Reserve Fund	12.000,000
Resources -	130,000,000

THE BANK OF NOVA SCOTIA

We invite your account. Special facilities for banking by mail. Thirty-three branches in New Brunsw.ck. Head Office, Halifax, N.S.

2A

FEED SITUATION THIS WINTER MOST ACUTE

(Continued from page 580)

(j) Provide funds wherewith to purchase, manufacture, mix, store, ship, carry and deliver the said ingredients and feeds.

(k) Sell the said feeds at a price not to exceed $—— per ton over the actual cost of the ingredients, delivered at the mill, warehouse or other storehouse of the Millers.

(l) Furnish the Committee when demanded with samples of the said feeds for the purpose of analysis and so manufacture the said feeds so that at all times shall they be upon analysis at Ottawa equal in food values to the standard set by the Committee in accordance with the said formulae.

2.—The Committee shall

(a) FuFrnish to the Millers approved formulae for the mixing and manufacture of the said foods.

(b) Approve of the sources of supply of the said articles and ingredients.

(c) Arrange with such persons or corporate bodies as shall have the matter in charge in Canada and the United States that the said articles and ingredients may be exported from the United Staets and imported into Canada.

(d) Receive, recommend and guarantee to consumers or intending consumers the quality of the said foods and the food values thereof as having been manufactured according to the formulae approved by the Ontario Department of Agriculture, as having been subject to sample and analysis from time to time.

(e) Circularise farmers and organizations, advertise to some extent in public and agricultural press and place the machinery of the markets branch of the Ontario Department of Agriculture at the disposal of the Millers ofr the purpose of stimulating the sale and use of the said feeds.

(f) Recommend and assist in every possible way the Millers in the sale of the said foods.

IN WITNESS WHEREOF the parties hereto set their hands, etc.

The circular and agreement published above disclose conditions which are not aat all reassuring. What we can do in the Maritime Provinces to meet the situation is a qusetion which should be occupying the attention of the departments of agriculture of all three provinces. It is a difficult matter to get the ear of a man as busy as the ear of the average farmer is just now. He has his own troubles in the great shortage of labor that confronts him. To just allow matters to drift until the cows need feed, is to invite disaster. Every wide awake agricultural society should take action to bring to the attention of farmers, the pressing need preparing for a change in diet for the stock. This will necessitate new methods of feeding. All this will tend to dislocate things for a time but pretty nearly everything is badly dislocated these days. In regard to mill feeds, it might be well to give this advice that the wise farmer will procure his feed as quickly as he can. He need not be too fussy, either, as to whether he gets bran or middlings. As to being particular this year as to the brand of the feed, it will be so scarce that pretty nearly any quality will look good next winter to the man with stock to feed.

In regard to substitute feeds, the Maritime Farmer has taken steps to ascertain just what kind of feeds will be available, at what price, how long and well they will keep, and in what quantities they can be secured. As soon as the information is available, it will be published for the guidance of stock owners.

One of the feeds which is offering, is re-cleaned elevator screenings at $35.00 per ton f.o.b. Fort William. There will also be balanced feeds, of 20 per cent, protein content available at $61 per ton delivered. The Maritime Farmer may also have a part of 2,000 tons of oil cake to offer at an attractive price. Those interested in these matters should consider carefully their particular needs at once. We shall be glad to give readers any information in our possesion and will be glad to assist in the procuring of feeds at wholesale prices for Maritime Farmer Readers.

Harvest Time is a Busy Time

Every minute counts at Harvest Time. There is no time to take chances with an unreliable Binder—there is too much at stake.

The Massey-Harris Binder

has a long and satisfactory record for Reliability under all conditions. Designed on the best mechanical principles, the best materials obtainable for the purpose used in their construction, and built by skilled workmen who have at their command the most improved machinery and appliances—no expense or pains have been spared to produce a Binder which will do its work perfectly under all conditions, is easy on the horses, convenient to operate, and durable.

MASSEY-HARRIS CO., Limited

Head Offices: Toronto.

Branches at: Montreal, Moncton, Winnipeg, Regina, Saskatoon, Swift Current, Yorkton, Calgary, Edmonton, Vancouver, Kamloops.

Agencies Everywhere

The Safest Place For Your Money

is to have it invested in Victory Bonds.

Everything else in Canada would have to fail before Victory Bonds could fail. It is the Premier Government Security.

So, you see, if you had $50 or more not drawing interest or drawing only 3% interest, you can't do better than invest it in Victory Bonds. The Bond will pay you 5½% on your money, and you can always sell it if you need to.

You can buy Victory Bonds at the following prices:

$1,000	Bond costs.....	$995.00
500	Bond costs.....	497.50
100	Bond costs.....	99.50
50	Bond costs.....	49.75

and accrued interest.

Larger amounts in proportion. Interest payable every six months at all banks.

And, remember, Victory Bond interest is free of Federal income tax.

Upon receipt of your application we will send bonds to your local bank, where you may inspect them before purchase, and you may pay us for them through your local bank without extra charge or exchange on cheque.

Write us to-day, or better still use the Application Blank: Address Dept. F.

Graham, Sanson & Co.
INVESTMENT BANKERS

Toronto General Trusts Building, Toronto.

I have $..... for investment.

Please send to ..... Bank at.....

$..... Victory Bonds due .....

State 5, 10 or 20 year maturity.

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Name .....

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NEW EDITION

"CANADA'S WAR LOANS, including VICTORY BONDS"

This booklet includes tables showing the Funded Debt of Canada, the Domestic War Loans of Canada, Income Tax Tables, a Comparison of the Price of British Consols, French Rentes and United States Bonds prior, during and after war periods. Record of subscription to the Domestic War Loans by Provinces—Record of subscriptions to the Victory Loan—How to buy and sell, etc.

Every Victory Bond holder should write for a copy. If you are interested, we shall be glad to send one on request.

A. M. JACK & SON, Halifax

Correspondents of

A. E. AMES & CO.

Investment Securities. *Established 1889.*

Montreal TORONTO New York

GENERAL USE OF VEGETABLES WILL HELP BREAD OUR SOLDIERS

(Continued from page 585)

salt is allowed to each quart jar; one half teaspoonful for the pint jars. After the salt has been added, pour the boiling water over the vegetables up to within one-quarter inch of the top of the jar. **Water should never be added to tomatoes.** If the tomatoes are very juicy, pack them into the jar, add the salt, put on the rubbers and covers, and clamp ready for sterilizing. Or, if desired, a few tomatoes may be cooked to a sauce without the addition of water and used for filling the jars. Corn is a vegetable that requires little water. If the corn is very milky, no liquid need be added to the jar. But if the corn is inclined to be dry, sufficient water may be added to fill it to within one-half inch of the top. For canning fruits, hot syrups of varying densities should be poured into the jars after they have been packed with the fruit. Three parts of sugar to two parts of water makes a good foundation recipe. A thin syrup made by boiling these proportions of sugar and water sufficiently to dissolve all the sugar without making the result sticky should be used for the sweet fruits such as cherries, peaches, apples, etc., that are not delicate in texture color. A medium thin syrup, made by boiling these proportions of sugar and water enough to thicken it and to become sticky, is used this year for all fruits, whether sweet, medium sweet, or sour.

The time scheduled for fruits and vegetables is scientifically accurate. Make your work as accurate, and you will never know a failure in your canning results.

After filling the jars, put on the sterilized rubbers and hot covers. If the Lightning type of jar is used, clamp the upper clamp into position. **Do not touch the lower clamp.** With Mason jars, tighten the cover sufficiently to hold it on the jar, but no more. If an Economy jar is used, put on the cover and snap the clamp on firmly. The capping of tin cans is a very simple process when the mechanical sealer is used. These cans should be sealed immediately after the boiling liquid is added. Adjust the top and place the can in the machine. Raise the can into position by turning the raising lever at the bottom of the machine. Turn the crank with the right hand and, at the same time, gently push the seaming roll with the left hand until it will go no further. Continue turning the crank until the seaming operation is complete, and the crank turns easily. Then the lever having the seaming rolls is pulled toward the operator, and the crank turned as before, until the operation is completed. It only takes a very few turns to complete this process. The jars and tin cans are now ready for sterilizing. This processs may be done either in the hot-water bath outfit or in the steam-pressure cooker. For the woman who has her own boiler, all that is needed is a firm rack to set in the bottom of it to prevent the jars from touching either the bottom or sides of the boiler. These racks may be purchased at a reasonble cost. Fill the boiler with warm water and place the jars carefully on the rack, being sure that they do not touch each other. The water should cover the tops of the jars **one inch at least.** The time of cooking is counted from the minute the water begins to **boil and continues to boil. Count no time that is not real boiling.** Be sure tokeep the tops of the jars covered to a depth of one inch with the boiling water, and keep the water boiling during the whole process.

As soon as the sterilizing is completed, while the products are still hot, remove them from the boiler and place them on a padded cloth or other soft material. Seal the jars tightly Lower the lower clamp of the Lightning jars, and tighten the covers of the Mason jars. Remove the clamp from the Economy jars only after they are thoroughly cold. Invert the jars in a place where there will be no draft but where the products will cool immediately. Allow them to stand for twenty-four hours to test for leaks.

The jars are now ready to be wiped and labeled. Such vegetables as beets and carrots, which are apt to lose their color, should be wrapped in paper and stored where no light will reach them. If the products are not stored in a cool, dry place, they can not be guraanteed to keep.

THE RIGHT WAY TO MAKE THE SIRUP

While fruits may be canned without sugar and sweetened at the time they are used, if sugar is plentiful a sirup may be made and used in place of the boiling water; the fruit is then ready to use when taken out of the jar. The rule for making the sirup is three quarts of water to two quarts of sugar, boiled to a thin, medium, thin, medium-thick or thick sirup.

Thin sirup is sugar and water boiled sufficiently to dissolve the sugar, but is not sticky.

Thin sirups are used for all sweet fruits, such as cherries, peaches, apples, etc., that are not too delicate in texture and color.

Medium-thin sirup is that which has begun to thicken and becomes sticky when cooled on the finger tip or spoon.

Medium-thin sirups are used in the canning of the medium-sweet fruits, such as blackberries, currants, dewberries, huckleberries, raspberries, etc.

Medium-thick sirup is that which has thickened enough to roll or pile up over the edge of the spoon when it is poured out.

Medium-thick sirups are used in the canning of all sour fruits, such as gooseberries, apricots, sour apples, etc., and delicately colored fruits, such as strawberries and red raspberries.

Thick sirup is that which has become so thick that it is difficult to pour out of a spoon or container, but is not sugared.

Thick sirup is used in preserving and making all kinds of sun-cooked preserves.

TEN ADVICES IN JELLY MAKING

1—Seect firm underripe fruit which is fairly acid, containing a large amount of pectin.

2—When cooking the **fruit** to extract the juice, allow it only to simmer and do not stir.

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3—Never cook fruit in a tin or iron vessel.

4—Never cook fruit with lid on the vessel.

5—Boil the strained juice rapidly but not hard, and do not overcook.

6—Make jelly in small quantity quickly.

7—Have the jelly glasses ready in a pan of hot water when the jelly is cooked.

8—If jelly is not firm, set it in the sun and cover it with a pane of glass or put it in a slow oven for a few hours.

9—Store in a cool, dark, dry and well-ventilated room.

10—Avoid "overdilution of juice, oversupply of sugar, overcooking of juice and sugar."

REASONS WHY JELLY "FAILS"

If it is tough it has too little sugar.

If it crystallizes it was stored in a warm place, has too much sugar, the sugar was added at the beginning or at the ending of the cooking, or it boiled too rapidly.

If it is fermented it was stored in a warm, damp place, or was not boiled sufficiently.

If it is moldy it was not properly covered, or was stored in a damp, poorly ventilated place.

If it is gummy the juice and sugar were cooked too long together.

If it is soft it contains too much sugar.

If it is too dark it was cooked in tin or iron vessels, the juice was overcooked or the juice and sugar were overcooked.

If it is cloudy the fruit was not clean, the fruit was not allowed to simmer when preparing the juice, the fruit was stirred when preparing the juice, the juice was not strained adequately, the jelly bag was pressed, the strained juice was allowed to simmer instead of boiling rapidly, or the sugar was added in the beginning.

TWICE TEN ADVICES ON CANNING

1—Follow one set of instructions only.

2—Begin your canning work the first day with a small quantity and with one product. Work carefully. Test before you can a quantity.

3—Prepare at any one time as many cans only as can be processed immediately.

4—Work quickly.

5—Have plenty of boiling water on hand.

6—Use soft water free from excessive quantity of mineral matter.

7—Use only the best types of jars.

8—Tighten the wire bails of glass jars each year before the canning season begins.

9—Never use a rubber more than once.

10—Scald or blanch in boiling water. "Do not count time until water jumps."

11—"Cold dip" in very cold water.

12—Pack jars with vegetables or fruits to within ¼ or ½ inch of top.

13—Do not add too much salt to vegetables.

14—Cover fruits or vegetables in jar with boiling liquid.

15—Place peas, corn, beans or asparaus in the canner as soon as packed.

16—Have the water in the canner boiling vigorously all over the surface.

17—Place the jars in the canner on racks with the water at least 1 inch over the top.

18—Count the time of sterilizing when the water begins to jump.

19—Cool the jars quickly.

20—Do not store until cold.

DRAINAGE A WAR AND PEACE MEASURE

Since it is necessary for us to supply our allies with food. it behooves us ot put every acre into cultivation that we possibly can.

There are at the present time thousands of acres lying idle on account of seeped condition of the land. This land can be rendered productive by the instalation of drainage systems thereon. Thousands of acres were reclaimed last year in this way that will be in csultivation this year, and the coming summer should see a much greater area reclaimed. Consequently we may look upon the drainage of land as a war measure in that it augments production. There is one important feature which distingushes the drainage systems as war measures.

Every dollar which today is put into a project of this kind is with the idea of increasing the productivity of the soil, and this will return interest in peace times as well as in war times. It would be most excelent if the same could be said of other necessary war activities in which the country is engaged at this time. Uunfortunately that is not the case. The weapons of offense and defence which are forged at great cost cannot be put to any peace-time use.

CONTROL SWARMING AND CONSERVE THE LABOR OF BEES

One of the greatest problems in beekeeping today is the control of swarming. It is natural for a strong colony of bees to swarm in early summer when honey is coming in. but the breaking up of the colony cuts down the honey yield; while watching for and hiving swarms takes a great deal of the bee-keeper's time, and the swarm may escape notice and fly away.

The methods of controlling swarming that have been tested at the Central Eperimental Farm. Ottawa, fall under three heads.

(1)—General measures. Partly shading the apiary; providing a large entrance with deep space between combs and floor; giving plenty of room in the brood chamber and sueprs; and young queens. These measures, while valuable have been insufficient in themselves to prevent the bees from raising queens in preparation for swarming.

(2)—Manipulations to prevent more than one swarm. The queen's wings are clipped, preferably during fruit-bloom, and when a prime swarm issues and is still in the air, the queen is picked up from the ground and placed in a cage. and the hive is removed to a new stand. A new hive containing the caged queen is then placed on the old stand to receive the returning swarm, the queen being liberated later. The field bees join the swarm leaving the parent hive so much weakened that it is ont likely to swarm again. To make certain of this, however, the parent hive may be merely truned around and not removed to the distant stanad until five days later. This method of swarm contdol necessitates immediate attention when the swarm issues. but. as the manipulations are simple, they can often be carried out by the home folks should the bee-keeper be away.

(3) — Manipulations to prevent swarming altogether. At the time of writing, none of the manipulations that have been tried have succeeded except the cutting out of all queen-cells every seven or eight days, and this failed during a heavy honey flow from clover at Ottawa in 1916 when the bees raised queens from worker larvae. and swarms issued before the queen cells were capped over. It has, however, been found possible to prevent swarmingin out-apiaries, forty miles north of Ottawa. by this means, although it entailed weekly visits from the middle of May until the middle of August. and much time spent in examining each colony.

Experiments in the control of swarming are being continued, especially along the following lines. which seem the most promising.

(1) Testing systems of raising brood to the super. Many of these will delay swarming under come conditions.

(2) Finding means by which the brood chamber may be easily examined without lifting off the supers. A hive in which the brood combs are in a rack that can be drawn out sideways is being tried.

(3) Endeavoring to breed a strain that will not swarm, of which the preliminary step is found out if the non-swarming character shown by some queens is inherited. A queen showing this character was found to retain it the following year.

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The barn is usually the most valuable building on the farm; it houses several thousand dollars' worth of stock, implements and foodstuffs. Don't leave so much valuable property unprotected. Safeguard it with

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3

SILO AS INDIEPENSABLE AS ANY OTHER PART OF FARM EQUIPMENT

In these times of high-priced feeds the silo is as indispensable to the farmer as any other piece of farm equipment. Many farmers would be better off if they had less other farm equipment and a silo or two. Silos mean livestock, and livestock means more pasture. hay, corn. other grains, and farm manure.

Live stock means enriched soil, larger crops, more money for the farmer, and plenty of prosperity for everybody.

Livestock means more meat, milk butter, cheese, and slothing for our soldiers. No nation can exist without an ampde supply of animals.

More livestock brings up the question of prodpcing and conserving feed. The passing of the range and the decrease in the fertility of our land have put us face to face with a serious problem. Production can be increased by the growing up of legume plants and bw feeding crops to animals and applying the manure to the soil. As fertility is increased, more food stuffs will be produced.

Silage should be considered by the farmer in the same light that the house-wife considers her canned fruit. a provision for future needs. The advantages of the silo are many. and if these were known to the farmer, more silos would be built. More of the corn crop can be saved by the use of the silo than is saved in the ordniary way. With the best methods. ordinarily about 33 per cent. of the crop is lost, and under certain conditions, it may far exceed this amount, but with the silo there is no loss except what is caused by fermentation. This is very small. Any method that will enable the farmer to get more out of his crops will increase the returns from his land. With the silo, our land will return one-third more than without it.—R. W. Clark.

CLEANING AND STORING SPRAYER

After the spraying season is over, generally the spraying machine is run into a shed and left until next spraying time again. But the condition of the machine when you next attempt to use it is going to be all wrong unless it was properly cleaned out after last using. More than one fruit grower and marketman has lost money because he waited until he wanted to spray to see if his machine was in working order. While he lost time working on the machine, opening up clogged nozzles, etc., the bugs were getting started on the crop.

Spray materials act on the interior of the spraying machine, corroding it more or less, especially in the case of lime-sulphur mixtures in iron pumps. Paris green is especially bad, since it does not readily dissolve in the spray mixture and tends to settle out of solution, clogging the pump or nozzles. One case of an unworkable field sprayer which came to my attention this season was caused by the compression chamber being completely filled with Paris green accumulations of the previous season.

When the last spraying is given, a couple of tankfuls of water should be run through the pumps at high pressure before putting it away. This will take the spray material out of the pump, and prevent the formation of scale on the inside of the pipes which would give much trouble clogging nozzles next season. The nozzles should be removed and stored away where they will not be lost. J. T. R.

SHEEP TREATED FOR INTESTINAL ROUND WORM

Sheep suffer from parasites to a greater extent than all other ailments combined. One of these is the intestinal round worm; the common name for it is "knotty gut." The life history of the worm has not been fully worked out, but it is known to be communicated from one sheep to another. It is possible by persistent use of worm medicine to dislodge the mature worm, but nothing can be done to remove the warts or nodules.

Medicines that have proved of value as preventatives are tobacco, copperas and turpentine. They can be fed in connection with salt. Use one pound of salt to four pounds of tobacco leaves. Another method is to use equal weights of salt and copperas, or salt saturated with turpentine. These may be kept before the sheep at all times. There is something wrong with the feeding arrangement of sheep when they are seen to eat snow.

It is one of the greatest fault of those who keep a few ewes or a large flock, that good, clean drinking water is not before tehm at all times, and salt, mixed with medicines, to allay the ravages of parasitic diseases, the worst diseases that the Canadian sheep breeder has to contend with.

GIVE GROWING PIGS MINERAL MATTER

The United States Deparment of Agriculture suggests the following mixture be placed at the disposal of growing pigs. It wil not only supply some light mineral constituent, but is said to be valuable in preventing worms:

Charcoal	1 bushel
Hardwood ashes	1 bushel
Salt	8 pounds
Air-soaked lime	4 pounds
Sulphur	4 pounds
Pulverized Copperas	2 pounds

Mix the lime, salt and sulphur thoroughly and then mix with the charcoal and sahes. Dissolve the copperas in one quart of hot water and sprinkle the solution over the whole mass, mixing it thoroughly. Keep some of this mixture in a box before the hogs at all times, or place in a self-feeder.

SILAGE VALUABLE SHEEP SEED

The most successful sheep men of the country are awakening fast to the great value of silage as a sheep feed. Silos are fast making their way into the western range country and the sheep are receiving their share of the result.

What would be termed good quality silage for dairy cows will also prove wholly desirable for sheep. Most sheep meen feed from two to four pounds daily a head to sheep, and from one to two pounds to lambs. When lambs are on full feed of grain such as corn, and are also receiving fair allowance of hay, they will, as a 1½ pounds daily. Breeding ewes should not be overfed before lambing season. Make 2½ pounds the maximum feed a day. After lambing this may be slightly increased.

Silage acts as a desirable appetizer, and serves to keep the digestive organs in healthy condition. It should not comprise more than half of the ration.

GIVE CALF A GOOD START DURING SUMMER

The calf shows very quickly the effects of poor care, and this often occurs during the summer months because of the pressure of other work, although it is really much easier to keep a calf thrifty in summer than in winter. Calves grown on farms should have grass pasture provided for them and should be fed some rain, preferably oats, during the first five months of their life. In taking them from the cow and raising them by hand on skim milk, you are preventing them obtaining butter fat, which is a natural part of the food of a young animal. You must replace this, insofar as it can be replaced, by the use of a grain rich in oil, fed to the young animal on grass, the grass itself, taking the place of the butterfat in milk to a small extent. A calf grown upon swim milk, grass, and a small amount of oats, will be a profitable, healthy, strong, and rapidly growing animal, while a stunted calf will require much more feed next winter to get him started towards making good gains.—G. E. Morton.

STICKING BUSHINGS

Binding of the bushings that surround the push rods frequently causes trouble. This may be caused by the oil becoming gummy or by valve grinding grit that has gotten down into the interior. If the aperture is closer with a cloth before the valves are ground this latter trouble will be obviated.

The style here illustrated is Queen Anne —a veritable "object d'art."

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The Pathephone excels others because it not only embraces ***all*** of the most desirable features possessed by other instruments and has them in their most perfect development, but it also has many points of superiority exclusive to itself. Furthermore, the combination of the Pathephone and Pathe' Records presents to music lovers an offering that is unrivalled, for the Pathe' method of recording, with its long, broad sound-wave and the reproduction by means of a smooth Sapphire Ball instead of a digging, scratching needle, produce a tone wonderfully full—rich—natural and indescribably sweet.

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The Permanent Sapphire Ball—no digging, tearing needles to change.

Records that will wear thousands of times.

An all wood tone chamber (on the principle of a violin.).

Pathe' Tone Control—regulates the volume of sound.

Plays perfectly all makes of records, as well as the Pathe'.

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METHODS OF WEANING LITTLE PIGS

Weaning time is the most critical period of the hog's life. The approved practice is to wean at about six weeks. Teach the litter to eat three weeks before weaning, using a crib or creep which excludes the sow, or a separate pen. Feed, in a trough, preferably, middlings with skim-milk. With middlings at present unobtainable, finely ground sifted oats is best. Feed only small quantities at first and avoid having decomposed or stale food left over. After weaning, add shorts gradually up to equal parts and from the secon dto third month add barley or corn as one-third the total meal ration. First and last, avoid over-feeding with its consequent train of evils.

Within the last year at the Central Experimental Farm, experiment and subsequent practice has indicated a system whereby weaning is simplified and th ebad results of careless feeding practically eliminated. Instead of "hand-weaning" or feeding the weaning pigs milk and meal in a trough, a small self-feeder is substituted in the creep, skim-milk being fed in a separate trough. Finely ground oats and shorts, and later ground elevator screenings with a small proportion of ground corn, if available, are placed in the feeder. Thus, the little pig feeds himself when and as much as he sees fit, is able to eliminate from the meat eaten much fibrous material which he must consume willy-nilly where fed a slop, an dincidentally accustoms himself gradually to skim-milk. Except in cases of early litters, the little pigs are given access to outdoor runs at all times from two to three weeks of age. Excellent growth is shown, the pigs developing clean, long and thrifty, with no evidence of thickness, pudginess or lack of energy. Absolutely no evidence of indigestion or scouring has been seen, and in one instance where a dozen litters were so fed at a central feeder the percentage of "culls" was remarkably low. When finally removed from the sow, pigs so weaned, particularly where they are self-fed subsequently give minimum evidence of the check in growth, usually incidental to weaning in a greater or lesser degree. In short, while the experienced hog-man can hand-wean his pigs with maximum results, the farmer lacking experience or depending upon ever changing attendants, is likely to run into difficulties. The method described besides reducing labor apparently removes the danger of irregular and over-feeding. Both method and results might be described as automatic.

In the foregoing method, skim-milk plays an important part. Where this or other milk product is unobtainable, experimental evidence would show that good pigs may be raised by following this method and supplying tankage, blood-meal, fish meal or some similar animal product in a separate compartment of the feeder, not mixed with the regular meal. Pigs, so fed, have shown only slightly inferior in quality to skim-milk fed olts, but the cost to produce would seem to be considerably increased.

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MILKING
MACHINES
Hill Crest Pontiac Susie
Butter 7 days, 34.10, Milk 760, butter 30 days 135.52, milk 3216.8, milk one day 122.5.
Hill Crest K.P. Ranwerd
at 3½ years, butter 7 days 34.04, milk 688.6 butter 30 day 135.04, (Canadian Record) milk 2738.1, milk one day 3½ years, 103.3.

AS OTHERS SEE IT

The endorsement of men who breed and raise cows to record breaking form are safe ones to be guided by.

Championship cows are not experimented with. The best methods only are used in caring for them. Experience, not argument, proved to such well-known breeders as Mr. G. A. Brethin of Norwood, Ont.—that Empire Milking Machines provided the best means of milking even champion, record holding cows.

Mr. Brethin in a letter of March 18th last writes that the official records of Hillcrest Pontiac Susie, Hillcrest K.P. Ranwerd, Hillcrest May Pontiac and Hillcrest Sadie Ormsby were made with the Empire.

He says further,

"We have a 20.81 lb. two year milking up to 77 lbs. in. one day (first calf,) a 29.31 lb. three-year-old milking over 80 lbs. with second calf and increasing, and a 34 lb. six-year-old milking up to 122.5 lbs. in one day and 3216 in 30 days. All milked in test with Empire."

Remember, an Empire Milker will do the work of three men and in the same time. It saves time, labor, the cost in wages and board of hired men and eliminates the drudgery of milking.

Empire Milking Machines are used on Governmental Experimental Farms and Stations and by Agricultural Schools and Colleges throughout Canada.

EMPIRE MILKING MACHINES

Write for further particulars and opinions of well-known farmers and dairymen.

Ask for Catalogue K

The Empire Cream Separator Co. of Canada, Limited

MONTREAL TORONTO

100

MILK IN THE HOG RATION

In order to raise and finish all the extra pigs that will be farrowed in Canada this year as a result of the campaign for increased production, it will be necessary to exercise the utmost economy in the use of concentrated foods. Pig raisers who have access to dairy by-products have a great advantage over others. Experiments have proven that when meal is worth $40 a ton, milk is worth more than $8 for an equal weight, that is, provided it is fed economically. Experiments carried on at the Dominion Experimental Farms and Stations show that for growing hogs, 60 lbs. and over, 400 lbs of skim milk produced results equal to 100 lbs. mixed meal. Buttermilk fed fresh is equal to skim milk. Whey is not so valuable. One hundred pounds of whey was proved equal to 19.2 lbs. of milk, that is, provided it is fed in not too large quantities and before it has soured.

A stud yof experiments with skim milk show that for young pigs 1 lb. of milk fed with 2½ or 3 lbs. of meal gives bes tresults. For larger hogs les milk may be used. For hogs over 100 lbs. in weight not more than 5 lbs. of skim milk daily should be fed in order to get the greatest value from the milk.

At the Nova Scotia Agricultural College it was shown that the best gains were made by feeding a lot of pig ration composed of 148 lbs. of grain, 900 lbs. of skim milk, and 110 lbs. of mangels. At the Ontario Agricultural College the best results were obtained where the proportion of milk to meal was 2.5 to 1. In one trial in which this proportion was used, 365 lbs. of skim milk were equal to 100 lbs. of meal. This agrees fairly closely with the results obtained at the Ottawa and Branch Farms.

In a series of articles that appear in the May number of the Agricultural Gazette, both Ottawa and Guelph authorities agree that it does not do to change the diet from sweet to sour milk. For young pigs the sweet milk is much to be preferred. For larger pigs it seems to make little difference whether or not it is fed sweet or moderately sour, provided whatever condition favored is uniformly kept up, that is to say, if the milk cannot be obtained always sweet, then it should be fed sour as a rule.

SWAT THE FLY BEFORE ITS BIRTH

The most important way to control the fly nuisance is to swat the fly before it is born. Clean the stables and yards and keep the garbage cans covered. The following are very convenient and effective fly poisons:

Bichromate of potash, one dram in two ounces of water. Add a little sugar This mixture is not dangerous to human life.

One teaspoonful of formalin in one-fourth pint tof water . This must be kept away from children and house pets.

To quickly clear a room where there are many flies, burn pyrethrum powder and sweep up the flies.

WILLOW FARM AYRSHIRES

DATE—

JULY 17th, 1918

PLACE—

WILLOW FARM

STEWIACKE

Col. Co., - N. S.

PRINCESS PAT OF WILLOW FARM No. 39501.
R. O. P. record as 2 yr. old 9376 lbs. milk and 383 lbs. fat.

25 head P.B. Ayrshires

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Grade Cows and Heifers

Clydesdale Mares

Sheep, Pigs

Grain, Farm Tools

Wagons

Harnesses, Robes

Household Furniture

AUCTION SALE JULY 17th, 1918, at 1 P. M. Sharp

I am selling at public auction on this date, my entire herd of 25 Pure Bred Ayrshires, also all other stock and implements and Household Furniture, as I have sold my farm and am going West. This will be a sale of exceptionally high class stock and is positive. Breeders wanting extra fine sires from R. O. P. dams with large records, also choice young females, cannot afford to miss this sale. This will be the largest sale of R. O. P. Ayrshire Stock ever held in the Maritime Provinces.

The first herd sire was Prince George of Willow Farm, No. 35736, whose sire was Stadacona Conqueror No. 28836 and dam Gurta II. of Allendale 25405. Her R. O. P. records for 3 successive years was 34210 lbs. milk and 1232 lbs. fat and winner of Halifax Herald Silver Cup given in 1916 for best pure bred cow, any herd, on Exhibition Grounds.

The second herd sire was Flavius of Ottawa No. 43178. Sire, Monarch of Tanglewyld No. 34626 and dam Flavia 3rd of Ottawa No. 28100, with R. O. P. record of 8609 lbs. milk and 342 lbs. fat. We have several fine heifers after this sire and now bred to our present herd sire (3rd).

Present herd sire is Prince of Rosemont 3rd No. 48032. He is 3 yrs. old. Sire Rospitt No. 34386 (whose dam was milkmaid 4th 12374, the dam of Milkmaid 7th). His dam is Rose No. 31884 with R. O. P. record as 2 yr. old of 10795 lbs. milk and 435 lbs. fat, and as 4 yr. old with 12913 lbs. milk and 485 lbs. fat in R. O. P., and has since qualified in R. O. P. as mature cow with large record. He is always first prize winner. He is in this sale.

Also one bull 10 months old, whose sire is our herd sire and dam is Princess Pat of Willow Farm No. 39501. This is fine calf and fit to head any herd.

BELOW IS LIST OF SOME OF THE COWS OFFERED:—

There will be three daughters of Gurta II. of Allendale 25405, two of them whose sire is Hillside Napoleon (Imp) No. 32200. These two cows and their dam and another cow in this sale, headed by our herd sire, won Silver Cup given by Halifax Chronicle in 1916 for best dairy herd any breed on the Exhibition Grounds. One of these cows, whose picture is on this page, Princess Pat of Willow Farm No. 39501, has R. O. P. record as 2 yr. old of 9376 lbs. milk and 383 lbs. fat. We have a fine heifer from this cow due to freshen in August.

East Court Sea Foam No. 37544—sire, Wee McGregor 28682, dam Gardrum Ocean Girl, No. 28219. She produced in R. O. P. as 2 yr. old 8849 lbs. milk and 407 lbs. fat and qualified as 4 yr. old in R. O. P. with 11084 lbs. milk and 493 lbs. fat in 342 days. During this test 5 weeks after freshening she produced 69 lbs. milk per day, testing 4.1%. Three fine heifers from this cow will be in sale.

Lady Lilly No. 37147, qualified with 10150 lbs. milk and 424 lbs. fat in 329 days and freshened again inside of 12 mos. Two of her heifers will be in this sale.

Lady Gertrude of Spruce Row, 44582, sire, Howies Crusader (Imp), 26363 in R. O. P. registered, and dam Lady Kirsty of Glenora 1957, (with R. O. P.) Lady Gertrude qualified as 2 yr. old with 5767 lbs. milk and 271 lbs. fat. She will have a heifer 1 yr. old in sale.

Also several other high class young cows, some fresh, others due this fall or early winter. Also Grade Ayr. and Guernsey cows and heifers. The oldest cow in sale is 7 yrs. old.

Also one Pure Bred registered Clydesdale filly, 3 yrs. old, weight about 1400 lbs. This is an extra fine clean limbed mare. Color, dark mottled brown. Also one filly, 1 yr. old, sired by Alto Axworthy and one Clydesdale colt, 10 mos. old.

Also 8 young grade Shropshire ewes and lambs.

Also 1 brood sow and six spring pigs.

Also, wagons, sleighs, harness, chains, forks, scales, power hay cutter and farm tools. Also household furniture.

Also 100 bu. oats, 25 bu. wheat and 2 ton pressed straw.

TERMS OF SALE:—3 months credit with approved joint notes. All amounts under $10 to be cash, and 2% discount for cash on amounts over $10.

C. C. FULTON,
Auctioneer.

ARTHUR S. DENNIS,
Stewiacke, Colchester Co., N. S.

DON'T FORGET THE DATE, JULY 17th, 1918. ONE MILE FROM DEPOT.

HOME GROWN CLOVER SEED IS THE BEST

It has repeatedly been demonstrated that there is rather grave danger in using imported red clover seed, for the reason that imported seeed often does not produce the crops that it is expected to produce. Imported seed may germinate beautifully, a magnificent stand may be secured but, alas, in the spring following the seeding there is often disappointment in store for the farmer who has sown imported seed. He often finds the clover more or less killed-out.

This killing is often due to alternate freezing and thawing in the spring, causing heaving of the soil and killing of the clover, but in many cases the killing is due to the fact that **imported clover seed produces a crop that is too tender for the Canadian winter.**

Clover raised from imported seed does not stand the winter nearly as well as clover grown from seed raised in Canada. In other words, whenevei Canadian-grown seed is used, the crop is likely to come through the winter in much better condition than when imported seed of a less cold-resistant type is sown. The stand of clover raised from Canadian-grown seed is consequently apt to be thicker and more vigorous and, as a result, heavier hay and pasture crops can be expected than when imported seed is used.

That heavier crops are realized from Canadian-grown seed has been amply demonstrated by the Experimental Farms' system and under the circumstances it is our opinion that **Canadian-grown should, whenever possible, be used in preference to imported seed.**

During the last few years especially, a great number of farmers have followed the suggestion to use "home-grown" red clover seed and, as far as can be ascertained, no one has complained of the results. On the contrary, any one who has used seed on his own farm or in his home district, has been well satisfied with the crops realized.

In view of this we would advise every farmer who has a red clover field to set aside part of it for the purpose of producing a crop of seed sufficient to supply at least his own demands. The importance of using home grown seed may be overlooked by many who for years have been accustomed to secure their supply from the nearest store, but it is our opinion that **the farmer who raises his own clover seed is well advised.**

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ALL fences manufactured by the New Brunswick Wire Fence Co. Ltd. are made by the most skilled labor and of the very finest materials.

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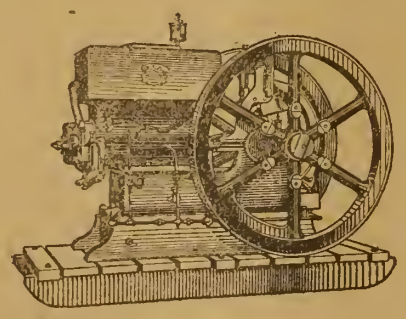

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Volume 23. SUSSEX, NEW BRUNSWICK, JULY 9, 1918. Number 19.

New Brunswick Coming to the Front in Sheep Raising

Dog Tax Reduces Number of Curs

For many years the Editor of the Maritime Farmer advocatetd a tax on dogs for the better protection of the sheep industry of the aMritime Provinces. A little over a year ago the New Brunswick Legislature enacted a law whereby, on the petition of twenty-five or more property owners in a county the County Council shall tax every dog in the Municipality and thereby create a fund from which losses incurred by sheep owners by the ravages of dogs will be made good.

The majority of the Counties in the Province of New Brunswick have put the act in force and it is working splendidly.

We met a farmer in Gloucester County a few days ago who said his thoughts had referred to the editor of the Maritime Farmer a few days previously when no fewer than twenty-five dogs in his vicinity had been hastened across to the happy hunting grounds the next day after the tax collector had gone his rounds and collected the 1918 dog tax. A lot of useless lamb killing curs have been put out of business in other sections of the Province. May the good work go on. We are satisfied that the agitation carried on by the Maritime Farmer and the New Brunswick Farmers' and Dairymen's Association is bearing the fruit of reddess to an industry that for many years had been going to the dogs.

There never was a time in the sheep industry's history when mutton, lamb, wool and breeding stock brought such remunerative prices as they do at present. It will be many moons before prices will, if ever, droy to the low pre-war level.

The New Brunswick Department of Agriculture, wishing to encourage the sheep industry as much as possible, is making provision whereby farmers who wish to engage in this industry, but who may not be financially able to secure a flock, may procure the financial backing they require.

The Act reads as folows:

BILL

An Act to Provide for the Purchase and Sale of Sheep

BE IT ENACTED BY THE LIEUTENANT-GOVERNOR AND LEGISLATIVE ASSEMBLY AS FOLLOWS:

1. The Lieutenant-Governor-in Council is hereby outhorized, upon the recommedation of the Minister of Agriculture, to purchase for the Province such a number of sheep for breeding purposes as he may determine to be in the publis interest, and for that purpose may incur an expenditure to an amount not exceeding fifty thousand dollars ($50.000) which amount shall be paid out of the revenues of the Province, and said sum shall be returned to the Public Treasury from the proceeds of the sale of such sheep immediately sale is effected and deliv- returnde to the public treasury from the proceeds of the sale of such sheep immediately sale is effected and delivery made.

2. The Lieutenant-Governor-in Council may guarantee payment of any advance made to any farmer by any chartered bank with the Province up to an amount equal to two-thirds of the selling price, if not more than twenty-one sheep.

3. Such sheep shall be resold by the Minister of Agriculture, at such times and under such terms and conditions as to their being kept within the Province, and otherwise, as may be determined by the Lieutenant-Governor-in-Council.

Buyers Agreement

The undersigned agrees to purchase from the Honourable Minister of Agriculture for the Province of New Brunswick, the folliwing sheep, namely:————ewes and———— pure bred ram upon the following terms:—

1. To deposit $3.00 per head of said ewes and $10.00 per head of said ram, upon signing of this agreement, said deposit to be forfeited if sheep not accepted except under extreme and unforseen circumstances.

2. To take delivery of said sheep at any time that the Honourable Minister of Agriculture may be able to deliver same. Said date not to be later than the fifteenth of December, 1918.

3. To supplement the cash deposit mentioned in paragraph (1) herof when the said sheep are delivered so that the deposit shall amount to one-third of the gross purchase price of said sheep. Said gross purchase price shall be the actual purchase price paid by the Government of New Brunswick for said sheep together with all freight and handling charges on same.

4. To give a note for the balance, payable in one year, with interest at six per cent, per annum until paid, whether paid at maturity or not, and any other security required by the Manager of the Bank through which this purchase has been made.

5. Not to sell, kill for market or home consumption or otherwise dispose of said sheep until all claims against said seep are paid, without the written consent of the Manager of the Bank through whom this purchase is made.

6. The liability of the undersigned to pay said note shall not cease by reason of the loss of said sheep through death, by accident or disease, or any other cause, or from straying.

Dated t————N. B., this———— day of————A. D., 1918.

If any of our New Brunswick readers would like to take advantage of the financial assistance thus offered it will be well for them to get in touch with their local banker without delay.

SENTIMENT OR SHEEP

Under the above caption a timely article on the sheep question in a recent issue of the Country Gentleman. We are reprinting the article in question for the benefit of our readers.

Some years ago the late Senator George G. Vest stabbed a great American industry with the sharpest weapon in the world. As a result of his and similar attacks the Government is now embarrassed to clothe its soldiers and it has been forced to add the regulation of another business to its long list of duties.

It is not at all likely that Senator Vest had even a remote inkling of the consequences when he pronounced his eulogy on the dog. He was a very eloquent man who doubtless liked to hear the sound of his own voice. Also he was a lawyer, and it was as a lawyer that he appeared in court and immortalized a dog ,possibly a dog that he never saw, and quite likely a worthless cur. Had chance given him employment where denunciation of a dog was in his client's interest, no doubt he could have done it masterfully.

But Senator Vest's great opportunity for a few eloquent words fell on the side of sentiment. There is no answer to sentiment, except more sentiment. Every lawyer knows that. If a lawyer can touch hearts of a jury the opposition may pound and expousd until red in the face, but reason and logic fall as aimlessly as autumn leaves. One tear of sentiment washes away a mountain of reason.

So the gifted senator drew a picture a true picture, of the dog that follows his master with worshipful eyes even to the grave and sleeps across it when other friends have deserted. And thereby he nearly killed the sheep business of the United States.

In the light of statistics, logic reason and experience, there is little doubt of this. Not only have the dogs of the nation killed thousands of sheep but they have discouraged the raising of milions more. When confronted with the facts the dog owner has always fallen back on the matter of sentiment and trotted out Senator Vest's eulogy.

"Now, however, comes Uncle Sam. He points out that there is not enough wool produced in the United States to equip our fighting men. There are no ships to go to foreign lands to get more. He practically confiscates what wool there is to make it go as far as it will, and appeals to the nation to get busy and produce more. At last sentiment bumps into sentiment. The dog owner must choose between his dog and his duty. In many cases he must choose between a dog and a son who is "over there." It will be interesting to see how the choice will fall.

"But to get to the orderly presentation of facts: We were not so particular about reasoning it out when we had sentiment to argue for us, but now that sentiment comes to checkmate sentiment, we dog owners can consistently demand the facts.

"Action was precipitated by the War Industries Board of the Council of National Defense. It has taken over entire control of the wool supplies of the country at a fixed price and from now on our clothing supply, at least at its source, will be in the hands of a Wool Administrator.

Civilians Left Out in the Cold

"It is not difficult to realize the necessity that forced the Government to take the same measures that it did to control the distribution and price of wheat. Unflinching figures prove that our total domestic wool clip is scarcely sufficient to equip an army of 2.000-000, soldiers with the woolen clothing they need, and the uncertainties of wartime transport make our supply from outside a big question mark instead of accurate figures. This leaves the civil population literally and figuratively out in the cold, unless we are prettty well favored by winds to blow the sailing vessels and by good luck in blowing the boche to the bottom. And the whole world is short, the annual clip having decreased 250,000,000 pounds during the war.

"This country finds itself in a particularly bad predicament. We have been obliged to buy from the British colonies and from South America more than half of the wool needed to keep us warm. Great Britain controls easily sixty per cent. of the fine and cross-bred wools of the world and eighty per cent. of the wools used in the finest clothing.

"In 1811 we had 53.633,000 head of sheep in the United States. Now we have, according to the Government estimate at the beginning of the year, about 49.000,000, though many producers and men in the trade claim this estimate too large by several millions. Along with the other sheep-producing countries we are going downhill when we should be preparing to supply our own mills and people. That is the situation with sentiment left out.

"There are those who look upon men who talk of wool shortage as alarm-

(Continued on page 617)

Butter That Will Sell Itself

How to Make it and Prepare it for Market

By George F. E. Story, in Country Gentleman

Nearly one-half the butter made in the country is produced on farms or in small plants as a side issue. There are three classes of people who can profitably manufacture butter at home—the people living on farms at a distance from a cream shipping station or creamery, the surburban reidents who maintain one or two cows and manufacture butter for their own table and the small milk distributor who manufactures butter primarily as a way of disposing of his surplus cream.

It is not necessary to have an expensive outfit with which to make high grade dairy butter. The most important pieces of apparatus are a good churn, butter worker, cream cans, paddles, strainer, thermometer, printer, wrapping paper and ice box. Of these the one of mist imoprtance is the churn. There are many types of churns on the market. None has proved more satisfactory than the barrel churn, unless it is the combined churn and worker type, which is rapidly replacing all other types. The advantage in combining churn and worker is that the butter is worked without being exposed to the air, thereby keeping it cleaner; and during warm weather it can be held for a longer period and more thoroughly worked than butter exposed to the high temperature of the room. The best material for a churn is wood, as earthenware becomes cracked and is very difficult to clean.

Pails, cream cans and dippers should be of the best quality of tin, and whenever they become worn or rusty it is better to have them retinned or buy new ones, as a metallic taste is very often imparted to the butter when the cream stands in a rusty container. A thermometer of th efloating dairy type is an extremely important factor in making high grade butter. Get a printer and paper of the form and size best adapted to the local trade. It is also desirable to have a refrigerator or tank of ice water in which the cream may be held and the butter hardened.

The Right Temperature

The temperature at which it is best to churn will depend upon the season of the year, the feed which the cows are getting and the time which can be given to churning. In the summer time when the cows are on pasture and buttter tends to be soft, fifty-eight degrees is the common churning temperature. In the winter when the cows are on dry feed, man yof them getting cottonseed meal and the majority of them well along in lactation the churning temperature may be raised to sixty or sixty-wo degrees, and even then there maye be some difficulty in getting the butter to gather. If so, the temperature may be raised to sixty-four degrees. Warm water added to the cream will decrease its viscosity and make the churning easier.

Color is added to the cream after it has been strianed into the churn. The amount which is needed depends upon the breed of cows and the feed they getting. Guernseys give milk so high in natural color that many butter makers do not use color. A teaspoonful of standard color to six pounds of butter is the ordinary amount required, although the local demand will govern the amount of color to be used, With a little practice the butter maker will be able to adjust the amount of color necessary.

There are several pointh to be considered in churning: The temperature must be correct and the churn must not be filled more than one-third full, as a churn over half full wil not give sufficient agitation to the cream to bring the butter together. Again, the speed of the churn must be great enough to cause the cream to fall from one side to the other rather than to slide around. Whenever the churn revolves too rapidly the cream may stick to th esides and not be properly agitated. If the cream has become contaminated with certain organisms, or if it is too cold, the cream is apt to stick to the sides of the churn or will froth up making the churning extremely difficult.

Stop the churn when the butter has gathered into granules the size of wheat grains. If churned longer large lumps or masses are formed, from which it is difficult to express the buttermilk, and butter of poor keeping quality is the result. Butter from very ripe cream—that is, cream testing above thirty-five per cent—often comes in large masses, and churned to a high temperature is very often greasy, while, on th eother hand, butter from cream that has less than twenty per cent. of fat in it often forms in hard balls which are difficult to work together to produce a fine textured butter. It requires good judgment on the part of the butter maker to stop the churn at the proper time to insure the complete removal of butter from the buttermilk, and yet not overchurn.

The next step is to draw off the buttermilk. A haircloth strainer is used to strain the buttermilk when it is removed in order that the pieces of butter shall not be lost. For wash water use amounts of water equivalent to the buttermilk drawn off, anad the temperature souldnot vary more than one or two degrees from that of the buttermilk. If the water is colder than the butter it will cause the graules to harden and prevent the proper blending during the printing and working process. If it is warmer than the butter, it is apt to cauase a greasy, salvy butter, especially if thoroughly worked. Revolve the churn several times at each washing.

If a combined churn and worker is used, salt is now added to the butter and is allowed to stand till thoroughly moistened before the rolls are started. The reason for this is that if dry salt is worked into tthe buttter and there is not sufficient water in the butter to dissolve the salt, it will form brine pockets and produce mottles or streaks in the butter. The amount of salt to be added is determined by the market which you supply. High grades of butter are lightly salted, usually one-half ounce to a pound of butter, but the lower grades of butter are usually salted at the rate of one ounce to the pound. Highly salted butter may be gritty unless it carries its full sixteen per cent. of moisture and has been thoroughly worked. If care is taken to have the butter come at a low temperature it will stand much more working without spoiling the grain, and the danger of mottles will be greatly reduced. The danger of overworking butter is important only when the butter is worked at high temperature.

Work the butter till it will break and leave a sharp grain a quarter of an inch long having much the same appearance as broken steel. In handling the butter do not use the hands, but always lift it from the churn to the printing table with the paddles. In using the paddles to work the butter give a strong downward stroke.

The butter is now ready for packing. The manner in which it is packed for shipment depends upon its destination. When sold locally to the home trade it is often desirable to pack in stone jars, as butter keeps better in these containers than in any other. The objection to this form of package is the appearance of the butter on the table. This, however, is not a factor when the butter is made into balls or pats when served. Most people are willing to pay a cent a pound more for butter which is put up in the form of prints, and consequently the greater part of the butter sold at retail is printed. In the East butter prints, with a monagram on the top of the print, are in common use. The difficulty of handling the prints when warm without disfiguring them is an objection to their use. The brick print is used throughout the Middle West and has superseded all other types.

Warm, Then Cool Molds

Molds, paddles and other wooden utensils should be placed in warm water when the churning is started. This fills the pores with water. Before using, however, they are placed in cold water to cool thoroughly. This prevents the butter from sticking to the wood.

In printing butter, a lump which will fill the print to overflowing is cut out of the mass. This is firmly pressed into the print so that a clen, full impression will result. Scrape off the excess with a drawing motion from the center toward either end in order not to pull the butter up from the corners. . Place the butter on a sheet of parchment paper which has previously been soaked in cold water. Where large amounts of butter are made, the butter is printed, allowed to harden, and wrapped later with dry wrappers, but it will be found more convenient in the home to wrap the butter when printed, an dfor this a wet paper is much better. The prints should not be piled one above the other till they have had time to harden. Special racks are of value in handling the prints and for holding the butter in the refrigerator till it is ready for packing.

Parafined cartons into which a butter print may be slipped are splendid if the butter is to be shipped any distance.

After the butter has been printed, clean the churn, worker and other utensils with hot water to remove any trace of butter. Soap or soap powders are good. After washing and scalding with very hot water, allow the woodenware to stand till the next churning. When needed for use again warm water is put in the churn, which is revolved before it is used. The wood will readily soak up and the cream will not stick to the wood if the churn is rinsed with cold water before using.

New Brunswick Wants Sheep

New Brunswick should have a million sheep upon her hill sides.

There are only one hundred thousand now.

Sixty million sheep have been lost in Europe since the war started.

Wool and mutton have risen to unheard of prices. Upon the enterprising farmer the world will depend to clothe the soldiers and feed the hungry. Patriotism and Profit both point the path of duty in this particular.

New Brnuswick's opportunity is at hand. The Government leads the way and lends its assistance.

With the idea of increasing the flocks of the province, the department of Agriculture has arranged in cooperation with the chartered banks, a system whereby large numbers of sheep can be placed in every part of the Province. Every farmer who can buy good lambs locally should do so, but it is not anticipated that the local supply will meet the demand; consequently importations will be made. The manager of every Bank has information regarding the purchase of same. A line of credit under conditions has been established for those requiring it. This Province now has approxiimately 100,000 sheep—there should be at least 500,000. There should be many more pure bred flocks within the Province to supply the yearly demand for pure bred rams; too much money is sent to other parts annually in payment for same.

The Department of Agriculture was aware that the sheep industry in Europe had been greatly depleted and considering the high price paid for wool with good prospects for at least ten years, decided to stimulate the industry. The Minister of Agriculture asked and was given authority at the last sesison of the Legislature to enter into an arrangement with the chartered Banks to buy and sell sheep and finance the transactions.

This Province can become famous as a producer of high class wool and mutton, but every man must be a partner to the movement and activity will be rewarded by ample returns. The slogan must be "Five Hundred Thousand Sheep for New Brunswick."

With an abundance of food and the opportunity there is no legitimate reason why every farmer should not make the raising of sheep an important factor upon the farm. The investment is small; the returns are quick and the interest obtainable upon the capital involved, if proper care be given, is very large. Wool is worth about 75c. to 80c. per pound and last fall good lambs brought from 12c. to 14c. per pound. At the present time wet ewes or shearlings that are serviceable cannot be purchased, because of their value to their owners, but every year sees large numbers of ewe lambs slaughtered, which under present conditions might well be retained for breeding purposes.

The successful farmer today is one who understands Nature; he not only understands but he is very careful not to oppose natural law and to co-operate at every vantage point to the fullest extent; he has learned that nature cannnot be coerced except in definite and direct lines which do not tend to defeat the objects which natural laws are forever constantly endeavoring to attain. What is true of the individual is true of the larger community, whether it be parish, county or country.

Canada has areas eminently adapted for general agriculture, for fruit and vegetable production, for apple growing, for wheat raising. Again there are others where the raising of livestock must be the foundation of successful

agriculture. New Brunswick undoubtedly come in the latter class; while this is true, it does not necssarily mean that the province should not put forth a great effort to maintain her proud reputation as a producer of high class potatoes, but for the farmers throughout the safer policy is to consider livestock production and the agriculture incident to such as the major operation and the one most likely to lead to the establishment of a satisfied, comfortable and moderately wealthy people.

Previous to the outbreak of hostilities ,the livestock population of the world, and particularly of North America, was becoming inadequate to meet the demands made upon it. United States had almast ceased to be an exporter in many livestock products and had actually commenced importing. Canada was fast following in a similar direction. This condition was very apparent in the movement of mutton carcasses from New Zealand and Australia to the Western coast of North America and some came to Halifax. The sheep population of the two countries had dwindled for various reasons, such as the breaking up of the large western ranches, the dog nuisance and to a genreal lethargy on the part of the people in regard to the value of sheep upon the average farm. Very often diseases which are not difficult to treat were allowed to ravage flocks because of the lack of knowledge of proper precautions; ticks took their toll through failure to dip. The low price of wool anad lambs was a feature also. Flocks became smaller and gradually they were done away with and too often their place was not taken with other stock.

Conditions had changed and were on the upward grade before the war. Wool grading and co-operative selling were direct causes of increased prices; the insistent demand from cities for juicy lamb enhanced values; the depletion of the flocks caused shortages at the larger markets, the rapid urban increase and the rural decrease in population upset the balance between the consumer and the producer and rather suddenly many discovered that the sheep industry was worthy of more careful attention. Lambs of standard quality began to soar in price and too often they were not to be had at all and mutton was served instead. But even this substitute did not meet the requirements.

The great depletion in the European flocks since 1914 has for many years to come unbalanced the supply and demand, not for food purposes only, but for breeding also; the farmer with good stock will find a ready market at remunerative prices. America has been wont to go to Europe for her breding stock, but every indication is that the reverse will be true in the early years of peace or at least the exportation from the old lands will cease. New Brunswick today has an opportunity to fill the gap which has been caused by social and economic reasons and by the years of war. Her situation offers excellent marketing facilities, her very rolling lands give pasture suitable for sheep, her climate is not too severe, and the valleys will supply all the hay, roots and the small amount of concentrates to carry large flocks through the winter season. The farmers of the province have a knowledge of sheep raising sufficient to warrant them in the extension of the industry. The co-operative system of selling the wool guarantees the best price the American or Canadian markets can offer; the grading system brings the producer and consumer much nearer together. Under the Canadian Co-operative Wool Growers Company, the sheej raisers of Canada have an organization all their own which is already strong enough to protect their interests in every detail.

CLOVER SILAGE

Red clover is gaining in popularity as an ensilage crop in British Columbia. Generally speaking, it is a safer crop than corn, is easier on the land, requires less labor in growing, and the average yields compare very favorably with those of corn, when the land is prepared with equal care.

The silo furnishes insurance for the clover crop in wet weather. A greater amount of more succulent feed, with les swaste, is obtained by ensiling the crop rather than curing for hay. Good ensilage cannot be made of clover after attempts to cure for hay have failed. Partially spoiled clover makes very inferior ensilage.

Clover i sready for cutting when the maximum bloom is reached. It is best cut in the morning when the dew is on, raked at once, and only as much cut as may be ensiled during the day. If it wilts rapidly better results are obtained by adding water. It should feel wet as it falls from the blower. The cutter knives should be kept sharp and set to cut approximately half inch lengths, as the clover packs more closely and is much more easily removed from the silo when cut short.

Clover is especially adapted for use as summer silage. It may be put in the silo in June and thus utilize space which would otherwise be empty. No waste occurs on the surface if feeding is commenced at once.

Analyses of corn and clover silage made from last year's crops show clover higher in nutritive value from the standpoint of protein content. Practical feeding experiments indicate clover to be equal to corn or milk and butter production, but the latter is a trifle more palatable.—W. H. Hicks, Officer in charge, Experimental Farm, Agassiz, B. C.

THE FIELD CROPS COMPETITION

In our last issue of the Maritime Farmer we published the regulations governing Standing Field Crops Competitions in New Brunswick for the season 1918.

Nova Scotia and Prince Edward Island also conduct Field Crops Competitions.

Undoubtedly the farmers who have taken part in these competitions in past years have a pretty fair idea of the kind of field the judges like to find when they visit their farms. The farmer who pays special attention to production of good seed grain will find ready sale at remunerative prices for all the seed he can produce. It will pay any farmer to specialize in the production of grain for seed and place it on the market, even if he has to purchase the feed grain required on the farm.

Field Crops Competitions are primarily inteded to stimulate the production of good seed which in its turn is responsible under favorable conditions for high yields in the general crop.

It will be well for the farmers who are entering the Field Crops Competitions this year to heed the following advice given by the Dominion Cerealist in the July number of Seasonable Hints under caption "Rogueing of Fields of Grain."

Rogueing of Fileds of Grain

The verb "to rogue," meaning to remove foreign or undesirable types, has not yet come into general usage, and the operation to which it refers is perhaps still less known. The high standard of purity set for seed grain disposed of from the Dominion Experimental Farms makes it sometimes necessary to rogue quite large fields, even up to twenty or twenty-five acres in extent, but such an extensive operation is not advisable for ordinary farmers or seed growers. Nevertheless, eve nin these times, when the cost of labor is so high, **many farmers who expect to sell part or all of their grain crop for seed purposes cannot afford to neglect altogether the rogueing of some of their smaller fields.** In the threshed grain, it is practically impossible to separate barley from wheat an dquite impossible to separate barley from oats. In a field of wheat or oats, however, when the barley has headed out, it is a simple matter to remove all the plants, provided, of course, the seed sown was not very seriously mixed.

If the principal fields which the farmer is growing are too large to be rogued, a wil generally be the case, the smaller multiplying fields (which usually consist of only about one or two acres each) should be gone through carefully two or three times at intervals of a week or more, between heading and harves, in order to remove all plants of other kinds of grain and any abnormal plants observed of the variety which was sown.

If the seed used by the farmer was pure as to variety, there is usually no need to attempt any form of selection. Any very unusual or peculiar heads which are observed should be removed: in other words, the grower should devote his attention to selecting out and rejecting everything abnormal found in his field. This is a much more hapid and, in some ways, even a better process than the laborious plan of picking out the seed which is to be retained.

By rogueing, every year, the special small, multiplying fields of pure seed, which every grower should have, much time and waste of good seed can be avoided when cleaning the threshed crop in the fanning mill, and the higher degree of purity of the seed grain which the grower will be able to offer for sale will enable him to command a higher price.

The hand picking of a few bushels of seed grain in the winter months is desirable, but this operation cannot altogether do away with the necessity for very careful inspection and occasional rogueing of the smaller fields in mid-summer.

METHODS OF CURING HAY

Hay making, or the curing of the hay crop, is an important process in farm work. This year extra help will be required and the hay-field will be the parade ground where many of the "S. O. S." boys and other recruits for Canada's second line of defence will "fall in." Making hay has always been hard work. Improved methods cannot do away with some of the heavy features of the work, though modern machinery enables a man to save more hay during the short period that hay is at its best than when the scythe, hand rake, fork an dtruck comprised his haymaking equipment.

The man in charge of hay making operation should **have experience, plenty of common sense,** and a knowledge of the fundimental principles of weather forecasting if he would conserve all the food value in the hay crop. All methods have to be adapted to the weather and the maturity of the crop. If the old adage was followed, "Make hay while the sun shines," with the present supply of labor much of the crop would be injured by overmaturity.

Some curing methods suggested are:

(a) Mature timothy and other grasses may be cut in the morning of a bright day after the dew is off, tedded, raked in the afternoon, and loaded from the winrows. This hay stored in a tight mow and salted saves in good shape for horses.

(b) Timothy and mixed hay, cut after the dew is off, at the best stage (when in bloom) should be turned, or tedded, raked in the afternoon, and built into large, carefully-made coils. Such hay will make rapidly in coil. Caps are used during threatening weather. Shake out coils to sun and wind, and haul in as soon as the hay rustles nicely. Stor as (a).

(c) Clover hay ,when an average crop or as the bloom goes off, may be cured as described under (b), except that the coils should be made smaller and the clover left in them for a longer time to cure. Caps are neccessary for bad weather.

(d) Heavy clover hay cut during the afternoon or evening receives very little injury from dew or rain if the leaves have not wilted. When it does wilt in the bright sun or wind it should be tedded or rolled over with side-delivery rake until dried out, then cured in small coils as escribed in (c). If clover gets too dry many of the most valuable leaves are lost.

(e) **During continued bad weather** the following English method might be tried with heavy clover hay. Cut when wet with dew or rain; rake at once, haul and stack while wet. Tramp the outside of the stack or rick solid with a horse until you practically create silo conditions. Let it settle, build on again and top it off with straw or grass hay.

Hay caps may be made from A. 1 sheeting cut into 40-inch squares, with a quarter-pound weight to each corner. Each cap will protect 75 pounds of hay.

POTATO YIELDS ON CLOVER VS. TIMOTHY SOD

Clover sod furnishes ideal soil conditions for the potato. It is easily worked into a fine tilth, and the mechanical condition resulting is particularly suitable for this crop, in that the soil is well filled toa good depth with decaying roots which make it yielding and open, but at the same time retentive of moisture. The timothy or grass sod on the other hand does not contain fibrous roots toa very great depth, may be more difficult to prepare, particularly if an old sod, will not give as suitable moisture conditions and undoubtedly contains less nitrogen.

One of the advantages of a short rotation is that the shorter the period the land is down to grass, the more easily can it be prepared for a hoed crop, and if the clover has made a strong growth, there is much more fibre in the soil from the roots in the one year than there is from the timothy for the same period. The older the timothy sod the more vegetable matter, or fibre, will it contain and the tougher it is, hence the practice of ploughing such sod early in the fall and working it dow nso that the sod may rot to facilitate proper working the following spring.—W. S. Blair, Superintendent, Experimental Station, Kentville, N. S.

SOILING CROPS vs. SILAGE FOR THE DAIRY COW

Good pasture grass is the ideal feed for the dairy cow, but it is not available more than a few months in the year. The same objection holds true with all soiling crops. The silo enables us to feed dairy cows succulent feed the year round, and preserves the fodder in a better condition, and with know.

Silage—Less Labor.—There is of necessity much labor attached to preparing the ground, planting, raising, and harvesting the common crops used for soiling purposes. The silo not only saves the labor and inconvenience in the sowing and cultivating of small patches of different kinds of crops, but also in the harvesting at short intervals during the season.

Silage—Less Waste.—There is usually much loss in being obliged to feed the soiling crops before they are mature ,and after they are over-ripe. For the dairyman who has the capital the most practical method of all to provide green feed for summer drouth, is to use a silo. Silage makes use of all weeds, harvested with the crop, for feeding purposes.

Uniformity.—The silo furnishes a feed of uniform quality, and always near at hand, available at any time during the entire year.

..Storage.—The silo permits the saving of crops in years of plenty for the other seasons of poorer crops. Our silos were filled to capacity last fall, consequently some corn silage will be saved for next year's use, which, from present indications, will be very acceptable.

Feeding Value.—The average results from two trials carried on here, indicate silage to be superior to green peas and oats fed as a soiling crop. When fed silage the cows produced 1.65 pounds of milk and .0215 pounds of fat more per cow per day than when fed the soiling crop.

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JULY 9, 1918.

DATES OF ISSUE.

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STICK TO THE DAIRY COW

The outlook for the breeders of purebred dairy cattle looks very bright. That it would not be wise for them to always anticipate the same high level as this kind of stock is selling for, today, at the same time prices may be expected to remain as high, comparatively, as they are at present. What will be the level of prices on any kind of produce after the war no one can safely predict. That there will be a general depression seems almost certain. A readjustment without many incidents and extremes is most unlikely and if prices of foodstuffs are a great deal lower than at present there need be no surprise; but whatever takes place, one thing is certain, milk as an economical article of food will hold its own in the face of all disquieting conditions. The dairy industry because of its importance in sustaining the farm balance between cropping and fertility and because of its peculiar and almost indispensable qualities as an article of food, will be the last to go down under pressure and the first to come back with the incoming tide.

Stockmen generally claim that because of the depleted herds in Europe a great demand for purebred cattle will be coming to America—both the United States and Canada. This may or may not be a safe prediction. Just what influence the bankrupt conditions of these countries will play on the return to normal times remains to be seen rather than to be prognosicated. Many supposedly wise men have gone far afield in their predictions of world affairs, during the last three and one-half years, and many more that are in the air are destined to a similar fate, and whether or not this great European demand will pan out or not according to anticipation will yet remain an unsolved factor as regards the outlook for pure-bred dairy cattle for many months, perhaps even years.

In the midst of uncertainties, however, some things remain sure, and one of them is the fact that dairy produce will always be in demand. Other industries crop up now and then and for a little while seem to overshadow the faithful cow, but sooner or later she emerges from under the cloud more illustrious than ever and continues her course in life unmoved by her adverse experience, as though nothing in the world mattered so long as she kept her place "in the sun," and produced the best food to be found for the race and especially for the children.

The experience of the past has demonstrated that the dairy cow is the best proposition on the farm. Those who have pinned their faith to her, and who, through thick and thin, through evil report and good, have given her a reasonable opportunity to make good have not failed. More notes have been met, more mortgages lifted, more barns built and more homes made comfortable and happy through her influence and stability than through any other medium on the farm.

Will she fail now in her country's peril, when good food is needed as never before and when it will be needed in large quantities for all time in the future? If she fails nothing short of national disaster would be the result. No, she will not fail, and the man who remains on her decks will ride safely over the billows of financial disaster that may threaten or even shipwreck some other lines of agricultural interest and reach the port with his colors still flying.

FARM CHORES MADE EASY

There are many little improvements that might be made on the farm that would add to the efficiency of the farm management. For instance, the watering trough may not be placed near the barn. It may mean that it takes three minutes longer to water the horses. Yet when the horses are watered three times a day, th farmer loses practically ten minutes. In a year this would amount to sixty hours or six working days of ten hours each. A fewer number of days would be required in piping the water to the barn and this would make it more convenient and increase the efficiency of the farm ever after. A gate may be off its hinges and have a wire for a latch. These are little matters that could be quickly remedied but neglected they necessitate extra time and trouble in opening and closing the gate every time it is used, and if the gate is near the barn it may be used many times a day. Look after these matters and make the necessary changes to increase the efficiency of your efforts.

MODERN FARM HELP

The farmer has many splendid helpers these days. It would be difficult to determine just which one of the modern inventions and machines are the most useful to him. Is it the tractor, the automobile or the telephone? What would the farmer do without the telephone? By its aid he is brought in touch with the outside world. He is no longer isolated from his fellowmen but by the simple turn of the wrist is brought within speaking distance of every other person who has a telephone even though they are many miles away. What this has meant to the farmer and his family no one can ever estimate. Then the automobile. It has brought every farmer closer to town and to every other farm. Distance is no longer of much consequence to the farmer who owns a car. He can go and come as he will and his family has advantages that their ancestors never even dreamed of. Finally we have the iron horse to relieve the farmer of many heavy labors and enlarge the scope of his operations. Truly the advantages of the present-day farmer are many.

SIRE IMPORTANT FACTOR IN DAIRY HERD

The economical production of milk is possible only when the machine used, the cow, is an efficient one for the purpose and when the person in charge knows how to manage the machine. A cow is born with a certain natural ability to produce milk if given proper conditions. The extent of this ability is mostly a matter of heredity or breeding. The high producing dairy cow is not the result of any special manner of raising the heifer calf. The most skilled feeder cannot put this quality into a cow born without it. All the good feeder can do is to make full use of the ability to produce milk which the cow has inherited. The extent to which this milk producing ability is inherited varies greatly, as is well known. Even in the well bred dairy herds not all the heifers raised prove good enough to retain in the herd. Constant culling of inferior cows has been found one of the most important measures in maintaining a profitable herd.

The ability to produce milk is inherited through both dam and sire, but since the sire is responsible for half the inheritance of each young animal, he is clearly the most important factor in improving the herd, according to C. H. Eckles of the Missouri College of Agriculture. If the cows in the herd are capable of producing only 200 pounds of fat a year and the sire used represents a breed or family, the cows of which average 350 pounds of fat a year, it would appear reasonable that the heifers would average halfway between an increase of 75 pounds of fat a year.

ADVERTISING IS VITALLY IMPORTANT TO ANY INDUSTRY

As a potential force in the promotion of business enterprise, advertising has come to be looked upon by the closest analysts as of primary importance. Its first purpose is the dissemination of information, and its second purpose is to stimulate action. These are the two factors which usually enter into business transactions. Advertising efficiently done is simply a proces sthrough which these two business elements are speeded up.

Looked at from this viewpoint anyone will admit that advertising is of vital importance to industry. It justifies the careful thought and consideration of both the seller and the buyer. If its full purpose is accomplished both parties to business transactions stimulated by it profit through it. And the fact is well known to all of us, when once we stop to think about it, that there is scarcely any business action nowadays that is not influenced in a greater or less degree by advertising.

In spite of its indispensable potentialities in business there are those who fail to recognize advertising as a justifiable business force. They would place it in the list of non-essentials, little heeding the fact that the removal of any potential force from the conduct of business makes for inefficiency, lost motion, and consequent increased cost.

Those who rail against advertising are rowing against the stream: Those who recognize it in its true light travel with their faces to the fore.

HERD'S BETTER HALF

The sire is half the herd. There is usually one sire for every twenty to forty females, hence the characteristics of the male are inherited by from twenty to forty times as many animals as those of a given female. Efficient sires are those bred for a particular purpose and are thus able to transmit to their offspring the characteristics for which they have been bred.

NEW BRUNSWICK COMING TO THE FRONT IN SHEEP RAISING.—DOG TAX REDUCES NUMBER OF CURS

(Continued from page 613)

ists. Dr. S. W. McClure, secretary of the National Wool Growers' Association—range sheepmen—says that for 1918 we have more on hand than we shall need. But the rub comes when we attempt to get the fleeces in sight in hand—if we can speak of wool in Australia or Argentina as in sight.

"Doctor McClure figures on 100 pounds of wool as the annual clipping ration of an American soldier. A recent estimate from a member of the Shipping Board who has been working on the problem of cargo space says 190 pounds will be the yearly consumption of a fighting man. We also have a Navy, and we are going to have a very big Army unless William decides soon to save his from destrustion. So no matter if we should be safe for a year, it is probably a good thing to become alarmed over the wool situation. The fact that the Government has taken charge, reluctantly we may be sure, nad has decided to cut out the few former frills on Sammy's suit, cinches the argument of necessity.

"A good deal of bunk has been passed out regarding sheep. The man who does not raise them has been taught to believe that they need not be watered, which is true if dew falls regularly or the vegetation is succulent. He has been assured he can turn them out and not bother about them until lambing and shearing time, if dogs and disease do not attack them. A lot of sheep are handled that way, and that is one of the prolific causes of failure with the flock on the ordinary farm.

"Sheep can be handled with less care than any animal on the farm. They will eat the cheapest sort of roughness, which tallies with the national need to save grain, and they are fed at the expense o fless human labor than other animals. If they are only given an occasional inspection, and treated as a side line should be treated, they will prove a profitable investment to the average farm. Like the farm poultry flock, which is the main dependence of the country for eggs, the farm wool and mutton flock will easily provide for the needs of the United States, and the farmer needs to give it even less attention than his wife gives her side-line business.

Slowing Down with Sheep

"The farmer who starts in with a few sheep and gives them half attention is usually surprised at the rapidity with which his flock increases and at the profits which seem to come without expense and with very little labor. I know men who have passed the age when they can buffet the active life og grain production, who have slowed down with sheep and made a better living than before.

"These are facts the Government is urging. Aparently the turning point has been reached in the much-harassed sheep industry. The great Western range country, the land of golden fleece, has probably passed the period of maximum production. The free lands are being settled up and the big producers are cutting down the size of their flocks. The places to turn to are the farms of the Middle West, the North, the South, the East and the cut-over timber lands. In some of these sections, notably Ohio, Michigan, Pennsyvania and the Eastern States, sheep once enjoyed great popularity. The competition of the newly opened West, the depredations of dogs and politicians, and especially the fear of dogs came pretty near giving them a knockout. But the wheel of fortune has at last brought the farmer a chance.

"Sheep are profitable almost anywhere these days—if they live to be shorn or slaughtered—and will continue to be good property for a long time, in view of present world conditions. Without considering wool, the price of which will no doubt be good for years, we have a good actual mutton market and a big potential market that can be developed.

"In 1900 we had 0.8 sheep per capita. Last year the proportion dropped to 0.56 per capita. In England mutton makes up 21.8 per cent of the meat diet. In this country only 3.78 per cent of our meat ration comes from the sheep. The British farmer raises sheep on small farms and apparently makes a go of it. He has no big and cheap ranges. He has intensive methods and he protects his flocks.

"According to an investigation made by men from the Office of Farm Management of the United States Department of Agriculture, the cow was more profitable than the sheep on New England farms just previous to 1916. But a big change has occurred. Now the sheep is the better profit producer. An animal unit of sheep—seven head—makes $33.18, while a cow—one animal unit—makes on the average only $12.72. Evidence from various farming sections approximately corroborates these figures.

"In 1913 an estimate made by the crop reporters of the United States Department of Agriculture showed that in thirty-six farming states the number of sheep could be increased by 150 per cent without displacing other livestock. That would mean 34,000,000 more sheep than those states now have. Fourteen hundred and eleven farmers were asked if sheep were profitable in the farm states and 887 answered "yes." If taken to-day the vote might be an unanimous affirmative, with one qualification—if dogs do not interfere.

"The great enemy of the flock outside of the range country is the uncontrolled dog. Of 894 answers to the question as to causes preventing increase in sheep production 531 replied "Dogs."

"The actual destruction that can be laid at the door of the dog kennel cannot be measured, but we can get near enough to ruin the wandering cur's reputation as a law-abiding friend of man. Reports from 502 counties in states of the East and Middle West show that 34,683 sheep were killed in one year out of flocks aggregating 6,836,492. Figuring on this basis the farm states probably lose, at the lowest estimate, considerably more than 100,000 sheep each year to the night-prowling cur.

Since July first of last year dogs have killed 3500 sheep, forty head of young cattle and seventy-five hogs in New York State. In the flocks chased or worried there were 20,000 sheep, and every farmer knows what a dog raid does to the survivors. The total damage is estimated for the year at round $100,000. So far nearly 300,000 dogs have been enumerated under the new law, but it is probable that there is still a large number unlisted.

"The dog population, in spite of laws requiring a tax and a license tag, will always be a thing to guess at, like the number of cats or rats in the country. Property that has no particular value is not very carefully accounted for, especially when it means expense to the owner. However, various estimates have been made and a favorite figure is 10,000,000—10,000,000 dogs!

"Estimates of the cost of keeping these dogs vary from nothing to fifty dollars a year each. A Mississippi farmer says that since the war, dogs have been more destructive than ever because the garbage can now supplies poor picking. Rather than starve many a homeless dog has beocme a killer.

Althouh the average canine is pretty near useless, it would be foolish to contend that all dosg or most dogs should be killed, even though they do consume a lot of food that might go into the making of edible meat. A man will have his dog and he will fight for him, just as a dog will often fight for his master. But the dog lover should help in the campaign to control or exterminate the sheep killer.

"No man of good sense who is really interested in the dog will object to this. Still we find that there are a lot of fanatics who froth at the mouth like some of the unfortunate animals they think they are defending from unjust laws. Strange to say, many proposed dog laws have failed of passage or have had their teeth pulled on account of the objections raised by misguided humane societies. Ohio failed to get a really good law on that account. The idea seems to be that it is cruelty to kill off dogs, even though they pay no tax and are allowed to run at will. If these well-meaning but short-sighted persons could see the results of a dog raid on a flock they might change their attitude. The dog once started on his criminal career becomes a canine Hun who delights in frightfulness. He does not kill for the sake of appeasing his hunger, but he will kill or maim dozens of sheep for the fun he gets out of it.

"This form of destruction is only the first count against the wandering dog. He is guilty of carrying diseases and parasites of livestock. In the recent disastrous outbreak of foot-and-mouth disease dogs were frequently the means of spreading the infection from farm to farm. The sheep raiser should find an ally in the hog grower, for the dog is an active agent in spreading hog cholera. But he is most dangerous to humans when he is affected with rabies. The State Hygienic Laboratory of North Carolina reports that from 1912 to 1917 1503 people were treated, and that in nine years 1217 rabid dogs were examined. In Massachusetts 164 persons were bitten by mad dogs in 1917. In New York State in one year ending June 30, 1917, fourteen general and 271 individual quarantines were placed on account of the presence of this dangerous disease. It is always the uncontrolled dog that does the damage.

"In spite of all the evidence pointing toward the necessity for stringent dog laws the sentimentalists are found in the opposition. They quote, not actual facts, but Senator Vest, or Pudd'nhead Wilson, who said: "If you pick up a starving dog and make him prosperous he will not bite you."

"Missouri, the state that sent Vest to the Senate, produced the cur's "national hymn." It was a weird thing, with about as much music and life as a coon dog's baying on a cold trail, but it represents a state of mind!

Every time I come to town
The boys start kickin' my dawg aroun' ;
Makes no difference if he is a houn',
They gotta quit kickin' my dawg aroun'.

In the legislature of one of the Southern States a preacher started his opposition to a proposed dog law in this strain: "I am the dog. God made me. I am the friend of man. My habitat is the earth."

"A pro-sheep man who knew somewhat of psycholoy met the "argument" with this knockout: "I am the flea. God made me. I love animals. My habitat is the dog."

Foolish talk? Yes. But this foolish talk is proof of the place the dog has in man's affections. We all like the dog and will certainly not exterminate him. He has been useful to the farmer and the flock-master from time immemorial. Now he is saving hundreds of lives on the battlefields with the fidelity that is a marvel to us humans. Such dogs have no enemies.

"It is the "bad egg" among dogs that needs to be controlled by law—to be destroyed if he is not worth the tax and attention to keep him out of mischief. A famous old Illinois sheep raiser expresses his feelings in a letter. "So far as I can see," he says, "no dog law has been made to keep curs from killing sheep. For year I have taken the law in my own hands and I kill every dog I see on my farm and will give anyone a dollar for a dead dog killed on my place. My idea of a good law is one that will make a man keep his dog under control, and to punish by imprisonment a man who does not observe it. Fining offenders a few dollars does not keep the dog up nor save sheep."

"A New Englander who has had experience with the shortcomings of the law says: "The vagrant dog is of great and growing importance. We have at hand a big source of wealth for the farmer and of cheap meat and wool for the nation. The hillsides of New York and New England could be stocked with sheep if we would but permit it.

"This cannot be done, however, while we permit the vagrant dog to roam at will. We do not ask that dogs should be destroyed. Governor Holcomb, of Connecticut, is reported to have said that if three-quarters of the dogs in the state were killed the sheep industry would revive, to the great advantage of the state. It should be possible to kill off the wanderin, homeless curs, but we do not ask even that.

"We ask that dogs should not be permitted to run at large either by night or by day. Those who want dogs should keep them under their control. There is no other protection for sheep. The expense of a shepherd with a small flock is prohibitive and dog-proof fences are too expensive.

"At a time when the world is short of food and when we have not half a supply of domestic wool for our own mills, is it too much to ask that the lovers of dogs should keep their pets at home?"

"During the past year there was a lot of agitation for a Federal law putting a tax on dogs. So far no such legislation has received much consideration. Even the plea of a wartime need for revenue did not stir up any enthusiasm. Perhaps it is just as well, for, although a Federal law might have a good moral effect on the states, state laws will always be necessary to handle the problem. Uncle Sam is not equipped to act as dog catcher.

"But state laws must be improved if we are going to have the raw materials needed for our industries and to cover our backs. If the war lasts much longer the dog is going to deprive the soldier of a suit that would protect him from pneumonia.

"A few of the state legislatures, notably in Pennsylvania and New York, have in the past year passed laws that already are having a decided effect in putting sheep raising on a new foundation. If every state had a law as thoughtfully planned as Pennsylvania's there would be some hope for the farm flock. Some legislatures, Kentucky's for one, have already copied it.

"This law provides dogless nights, for it makes a night-prowling cur an outlaw, and every canine six months old or over without an up-to-date tag is in danger of a death sentence wherever he is found. A new license must be obtained by January fifteenth of each year, and the fee is not less than one dollar nor more than two dollars for each male and not less than two dollars nor more than four dollars for each female. The exact amount is left to the discretion of the county commissioners.

"Anyone can enforce the law if he catches a dog chasing, worrying or wounding livestock. If he kills a dog, tagged or untagged, under these circumstances he cannot be held liable for damages. Tagless dogs that enter fields can be killed by the owner or tenant or by his agent or servant. Police officers are required to seize and detain dogs with tags that are unaccompanied by their owners or keepers. They must kill every dog without a license. For failure to do his duty a police officer is liable to a fine of two dollars for each offense. On the contrary, when he detains or kills a dog he receives a reward of one dollar. It pays the men to do their duty.

"Fines and licenses go into county funds and payments for damages to livestock are made directly from this fund. In New York the money has to be paid itno the state treasury and is paid out from that source, an inconvenience and a cause of much delay. Under the Pennsylvania law a man

(Continued on page 636)

HORTICULTURE

POTATO SPRAYING

By G. E. Sanders, Dominion Entomological Laboratory, Annapolis Royal, Nova Scotia.

Of all operations conducted on the farm it is probable that spraying potatoes is the most profitable. In fact, when one considers that the increased crop is due to spraying one acre of potatoes at a cost of about $15, is about 100 bushels it becomes apparent that probably the operation or investment that can be relied upon to give the greatest returns, of any open to farmers at lest, is potato spraying. It is equivalent to buying potatoes at 15 cents per bushel and it is more than probable that the price of potatoes will be more than ten times fifteen cents during 1918-19. Experiments carried on by the laboratory staff on the school plot at Annapolis in 1917 show that an acre of potatoes at the height of the grwing season will store about 5 bushels of potatoes per day. The potato being mostly starch, is made up almost wholly of materials that are gathered from the air by the leaf and not of materials taken from the soil. As soon as the top dies the storing of starch in the form of potato tubers stops. Unsprayed potatoes are likely to be and usually are attacked by potato blight when the normal crop of tubers is from one third to one half stored, and as soon as the tops are killed by the blight the storage of tubers ceases. Spraying with Bordeaux will protect potato plants absolutely from blight and will result in a normal season in keeping the tops green from ten to fifty days longer than normal. Keeping the tops green for only three days will result in 15 bushels more potatoes per acre or more than the value of fifteen dollars, and fifteen dollars will spray an acre fou ror five times, cost of labor as well as materials included.

In view of the shortage of food and the probable scarcity of potatoes in 1918-19 it is but litttle short of a crime for a man to neglect the thorough spraying of his potatoes in 1918. Every acre thoroughly sprayed five times means in a normal season one hundred bushels more potatoes, and this year the country needs the potatoes.

Potatoe sshould be sprayed when about eight inches high with a poisoned Bordeaux mixture, repeat every ten days or two weeks until the tops are done growing. Make sure that all parts of the plant, the tops and undersides of the leaves and the stems are thoroughly wet with the mixture.

To make Bordeaux mixture—dissolve 4 pounds of bluestone in 20 gallon of water and slake in another barrel 4 pounds of stone lime, making it up later to 20 gallons of milk of lime. Pour the two by alternate buckets into the spray barrel and add the poison. In using hydrated lime, dissolve 4 pounds of copper sulphate or bluestone in 40 gallons of water and 5 pounds of hydrated lime stirring rapidly all the while.

As a poison one can use any of the following, they being arranged in order of value, present prices considered. To 40 gallons use—

- 1½ lbs. arsenate of lime powder.
- 2 lbs. crystal arsenate of soda.
- 1 lb. fused arsenate of soda.
- 1½ lbs. arsenate of zinc powder.
- 4 lbs. arsenate of lead paste.
- 2 lbs. arsenate of lead powder.
- 1 lb. paris green.

LARGE INTEREST IN BEEKEEPING.—VIGOROUS CAMPAIGN TO CONTROL AND ERADICATE DISEASES. — DEMONSTRATIONS BEING HELD

At one time large crops of honey were harvested by bee-keepers in the lower part of the province, but during the last few years a large decrease has been notetl in the number of colonies of bees kept there. This decrease has been due in some cases to poor wintering but in others it has been caused by disease.

The American Foul Brood has been known to exist in that part of the provice for a number of years but with the exception of one or two cases, no effort has been made to control or eradicate it.

The provinces of Ontario and Quebec are vigorously fighting this disease the treatment of which is very simple, and when thoroughly carried out, effective.

With the object of acquainting the beekeepers with the apearance and symptoms of this disease so that they may detect and treat it, the Department of Agriculture, through their Provincial Apiarist, is carrying on a campaign for the control and eradication of the disease wherever it exists in New Brunswick. During the past few weeks nearly every apiary has been inspected in the districts where the disease has been known to exist, and the disease was definitely located in four different districts.

On June 18th and 19th, Mr. L. T. Floyd, Provincial Apiarist, assisted by Mr. C. B. Gooderham, Asistant Apiarist, Ottawa, visited a large number of apiaries an dinsjected more than 50 colonies of bees. On the afternoon of June 19th they held a demonstration in the apiary of Mr. Daniel A. Coates, Corn Hill, a large number of interested beekeepers being present. Mr. Floyd spoke on the opportunities for beekeeping and was followed by Mr. Gooderham, who talked on the different diseases effecting bees, demonstrating the treatment of the diseases by the use of affected colony. He stated that the disease germs were carried from hive to hive by the robber bees and in this manner the disease sprea dfrom colony to colony and from apiary to apiary. As the disease developed and increased the colony gradually diminished in numbers until all the bees were gone and their honey was left to be carried away by bees from healthy colonies. Mr. Gooderham also demonstrated the most approved methods of treatment for the disease and this was followed by a discussion of beekeeping work in which a number of the most prominent beekeepers took part.

Mr. Floyd invited those present to become members of the Beekeepers' Association which now has a membership of 83 and is doing good work in the interests of the industry.

The Department is able to report a large interest throughout the province in beekeeping work this year and the names of 400 different beekeepers are now on its mailing list.

It is planned to hold similar demonstration and field meetings in different localities throughout the province and announcement of the dates will follow in due course.

THINNING OF FRUIT

More attention is being given to the thinning of fruit than was customary a few years ago. Two main objects are being sought:

1st.—To produce fruit of a good size, perefct in shape and colour.

2nd.—To maintain sufficient fruit spurs vigorous enough to produce a full crop the next year and thus eliminate the "off year" habit of our trees.

After the June drop is over, inspect the trees and those with the heaviest crop on thin first. A tree bearing a full crop thin to one fruit to one spur. If the spurs are too close cut all fruit off every other spur. This leaves every second spur barren and able to store strength and vigor to produce fruit next year. When a tree has only a light crop two fruits may be left to a spur. The advantage of the single system is that the fruit does not get damaged by two specimens rubbing and knocking together in the wind. Start thinning as soon as you are sure that the imature fruit has fallen, and go over the trees twice at least. Thin apples 5 to 6 inches apart; apricots, large varieties 4 to 5 inches, small varieties 2 inches apart; peaches 4 to 5 inches, and pears 4 to 6 inches apart according to variety. In thinning apples and pears better results can be obtained by cutting the stems with small shears; otherwise there is danger of impairing the hold on the spur of the remaining fruit.

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SUMMER PRUNING OF FRUIT TREES

The summer pruning of fruit trees should only be applied to young trees that are making too much dense growth and not sowing signs of fruiting. We must remember that the leaves are the lungs of our trees, and if too much foilage is taken away, too severe a check is given the tree. The main abject of pruning in summer is to allow light and air to circulate freely through the centre of the tree and thus allow the fruit buds to mature and bear well developed fruit of good color and quality. To obtain this, cut back the side shoots and thin out the heavier growth at the top end of the main branches, taking care to leave one or two main shoots to carry on the building process of the tree. Do not cut these back. Start summer pruning as soon as you notice that the trees are getting too shaded at the centre where the bearing surface of young trees should be. Summer pruning is intended to develop and strengthen fruit buds rather than force leaf buds into fruit buds; this is borne out by the fact that the change from leaf to fruit buds takes place before summer pruning would be started. Thin out the tree a little at a time and go over them oftenr rather than defoliate heavily at one time. Air and sunshine not only increase quality and quantity of crops, but tend to keep away disease and maks handling and harvesting easier.JR. H. Helmer, Superintendent. Experimental Station, Summerland, B. C.

CARE OF THE POTATO CROP

If the potato beetles have not been all killed by the time this reaches the reader, there should be no delay in

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THESE shingles lock on all four sides, forming practically a one-piece roof of heavily galvanized steel, which, when properly grounded, causes lightning strokes to be evenly and harmlessly distributed. Proof also against fire, wind, rain or snow, and will not rust or decay, but will last a lifetime without need of repair. See your dealer or

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poisoning them. Anything which injures the foilage will lessen the crop; hence the leaves should be kept as free as possible from injury caused by insect or disease. A mixture of eight to ten ounces of Paris green and three-quarters of a pound of powdered arsenate of lead, or one and a half pounds of paste arsenate of lead to 40 gallons of water has been found more satisfactory than either poison applied separately. As the late blight may attack the plants any time after the first week of July, it will be desirable to make the first application of Bordeaux mixture with the last spray for bugs, and the two may be applied together. The formula for Bordeaux mixture is: 6 lbs. bluestone, 4 lbs. lime, and 40 gallons water. While the late blight does not appeare every year, it has been found very profitable, on the average to spray for it every year. In a three-year experiment at Ottawa there was an average yealry difference of 94 bushels yer acre in favor of spraying.

The tops should be kept well covered with the Bordeaux mixture from the time it is put on in July until the leaves dry up or are killed by frost. The number of times that it will be necessary to spray will depend on the season. Four times during the season would be a fair number of times in order to keep the foilage covered, but it might be that even one spraying, if it happened to be applied just before an infection, would save the crop. The aim should be to apply the Bordeaux mixture before the disease is seen, not afterwards.

Deep cultivation in July may do more harm than good by destroying roots and drying out the upper few inches of soil where tubers are forming. If the tops have not already met and cultivation is still necessary, it should be very shallow, or just enough to conserve the moisture. Sometimes hilling up gives better results than leaving the soil level, especially if it is a wet season and the soil heavy. In loose and sandy soil, level cultivation is likely to give better results in all seasons.

Conservation of moisture by shallow cultivation is very important, as tubers will not develop if the oil is dry. If the plants are kept in a healthy condition until the hot weather of mid-summer is over, during which time if the weather is dry few tubers will grow, the grower will be well repaid by the great development of tubers that will take place when the ground becomes moister and the weather cooler.

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CARE OF THE VEGETABLE GARDE

In order to have crisp, succulent vegetables, growth sould not be checked and, while in seasons which are cool and moist the cultivation or loosening of the surface soil is not si important as in seasons which are hot and dry, it will be found very profitable no matter what the season, to loosen the surface with the hoe or rake after every rain. In dry seasons this conserves the precious moisture, and in both dry and wet seasons it permits the air to enter the ground freely to promote growth.

If cauliflowers do not have an abundance of moisture they will not head well and while melons require great heat for best results, they must have lots of moisture also.

Celery will go to seed if checked in its growth from lack of moisture; hence the importance of keeping this vegetable growing well, which can usually be accomplished by keeping the ground well cultivated. If there is a protracted drought it will be desirable if praticable, to water the celery thoroughly.

The asparagus and rhubarb beds should receive a heavy applicaton of manure as soon as possble after the cutting season is over. Do not wait until spring, as this will be too late to affect the crop materially. Manuring now will help to make strong growth this season, which will mean that good crowns will be built up to furnish stalks for cutting next spring. As a rule, both asparagus and rhubarb are cut later in the season than they should be, with the result that the plants are weakened, the stalks become small, and the maximum crops are not produced from year to year. Neither of these vegetables should be cut after the first of Julqy.—W. T. Macoun, Dominion Horticulturist.

IMPORTANCE OF HILL SELECTING FOR SEED POTATOES WHILE THE TOPS ARE GREEN

Advice on the hill selecting of seed potatoes has usually been to dig a certain portion of the potato crop by hand and as the digger comes to a good hill with from eight to twelve or more well-formed potatotes above two ounces in weight each and typical of the variety, to place the tubers from such hills on one side so that they might be reserved for seed. This practice undoubtedly has led to increased crops, but experience on the Experimntal Farms and among growers who have been following this method has shown that the results were not uniformly as successful as might be expected. The investigation of potato diseases indicates at least one reason why increased yields from such hills used for seed cannot always be depended upon. It appears that such diseases as Leaf Roll, Mosaic, and others of that type, may infect the plant and the tuber without causing loss of yield during the season of infection, while the next year it is possible, and generally probable, that tubers carrying this infection will give an inferior plant and a small yield. It is, therefore, quite essential to select not only hills that give large yield but plants that show freedom from disease, and the only way this can be done is for the grower carefully to examine his potato plants during August or before such time as they begin to ripen and stake the hills which he finds free from such diseases as show on the plants. Then, when digging time comes the grower can go through his field and dig out first all the hills that have been staked. He will probably find that not all of them have large yeilds tf tubers and he will only take those that come up to or exceed the standard which he has set. By this process of double selection, if his work has been thorough, he will secure seed potatoes from healthy, large-yielding plants, which shoulr perpetuate their characteristics in the following crop.—W. W. Hubbard, Superintendent, Experimental Station, Fredericton ,N. B.

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Potatoes frozen in ground last Fall could have been saved by the Eureka. Works in ground and conditions where other diggers cannot.

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Beans and peas are rich in proteins. One pound of dried navy beans contains 1605 calories—almost the equivalent of a pound of wheat flour, 1635—and more than in a pound of round steak, 890 or of sirolin, 975. A pound of potatoes contains about 400 calories parsnips 300, green corn 460, onions 220. Six ounces of potatoes will save 1½ ounces of flour. With potatoes freely used we can get along with less bread.

A Wire Letter Basket is most useful in the kitchen. Baked potatoes arranged in it can be taken out of the oven, turned and put back with no danger of burning the hands. Turned upside down, it makes a fine rack for cooling bread and cake. tI is safer than a waiter in which to carry small pieces of china back and foth between the dining room and the kitchen.

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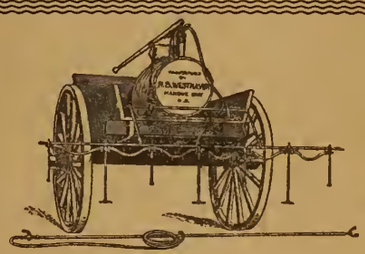

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Then order up a "Perfect" and do it right away,
And spray the fruit and tatties and save them while you may.

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DAIRYING.

SUPPLEMENTING THE COW PASTURE.—WHEN TO FEED CONCENTRATES

With coarse grains at abnormally high prices the question will arise in the minds of many dairy farmers as to whether or not it will pay to feed concentrated feeds of any kind on dairy cows while on pasture.

Given an abundance of good pasture, experiments at Macdonald College have proved that, it will not pay to feed the average dairy cow grain. With limited pasture and a summer of extremely unfavorable feather, it will pay to feed milking cows something besides pasture. If soiling crop or silage is available, concentrated feed is less important, but for the best returns from every standpoint a combination of the two is necessary.

The prevailing practice in many districts is to depend upon pasture entirely. For the average cow having as she does small milking capacity and usually quite a territory of rough pasture, it is questionable if grain feeding will pay under present conditions. On the other hand when farming is more intensified, with less acreage in pasture and better cows, it is absolutely necessary and it will pay to supplement the grass when it gets short with at least a limited amount of grain feed.

The time to commence feeding is just when the cows begin or even a little before they begin to shrink because of short pasture. If feed is delayed until the cows have materially decreased in milk and flesh the results from feeding at first will be disappointing and will continue so until the cows regain normal condition. This fact explains many of the apparently poor results from extra feeding.

The amount of feed necessary must depend on the cow's work, her condition, and what else she is deceiving. In the average case three to five pounds of meal per day will suffice. At the present time it is often a case of taking what meal may be available and mixtures are almost out of the question. Oil cake meal seems about as good value as anything and less of it will do. It is a good milk producer and is a splendid feed for sustaining and increasing body weight. If other feeds can be combined with it so much the better, but one pound of it per day even alone on short grass will go a long way in tiding the cows over a bad time.

CAN YOU MILK A COW? DOING THE JOB RIGHT MEANS BIGGER RETURNS

Diarymen are being continually exhorted to "breed, weed and feed," if they would realize the full possibilities of a good cow. Yet, with all this machinery coupled up and going smoothly, the system may not be without its breakdowns. One may practice all the latest intricacies of careful breeding and selection, feed a well-balanced ration calculated to produce the maximum in milk yields, and still the result, as shown in the milk pail be decidedly disappointing. It is one thing to put a cow in the proper condition to secrete a large quantity of milk, but the ability to secure by the actual process of milking, all the cow is capable of producoing is quite another matter; all milkers cannot, or at least do not do it. There's a reason.

The udder of a cow is a delicate piece of machinery and quite as sensitive to abuse or improper handling as a watch. Few dairymen, perhaps, realize this. Hence, to avoid losses, it is essential to know something of its structure and the part it plays in milk production.

It is erroneous to suppose that it is simply a sack into which milk is poured during the day to be drawn off at night. The udder is just one large collection of cavities or milk secreting glands, lined by many epithelial cells or small pouches, and surrounded by a net-work of arteries and veins. Throughout the day these arteries are bringing the various constituents of which milk is composed, such as fats, proteins, water, ash, etc., to the outer surface of these small cavities where the epithelial cells select the material that will ultimately become milk. Along toward night these cells have collected their full capacity of milk-producing elements and holds them available, but there is no milk.

Not until the milker mounts a stool and begins the actual process of milking do the numerous cells in the udder start to give up their contents, which gravitates to the milk cistern in and above the teat. To prevent too rapid flow and also to stop foreign material from working its way upward, the bottom part of the teat is guarded by what is known as the sphincter muscle. The amount contained in the milk cistern at any time rarely exceeds a pint. At first, the water content being less viscid passes through the cell walls more readily and in larger quantities than the solid particles of fat, protein and mineral matter. This explains the reason why the first milk secured is lacking in quality, that is, contains comparatively little fat and other solids. The dairyman, having a fondness for the stable cat has a ready remedy by seeing that his feline friend is liberally supplied from these initial strippings. As the process of milking proceeds, the bulk of the water content is given off, the remaining fluid becomes richer in fat, casein and mineral matter.. It has been found that these last strippings often test as high as ten or eleven per cent., while the first may be as low as one and a half per cent.

Now any dairyman wil have observed that a cow will not always give her milk down readily. This is absolutely notictable when her calf has been but recently removed, when she has been summarily hustled into the stable with a dog hanging to her heels or persuaded to "hist" with a few tatoos of a milk stool in close proximity to her ribs. The milk productive system of a cow is so constructed that she can retaliate automatically, withholding both quantity and quality. In fact no cow will give her full capacity unless in response to nervous stimulation. To do her best she must be in a pleasant mood. Many little things, that are seemingly trifles make a difference in the milk yield and are inevitably portrayed in the milk cheque. For example, one cow objects to whistling, but likes singing, another has opposite views on the matter. Few, if any, to their credit, can be soothed with profane language, while many prefer absolute quietness to any form of entertainment.

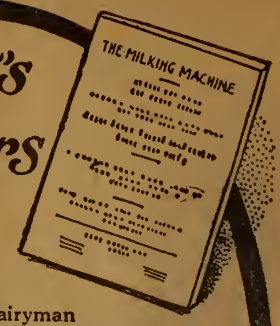
There is no denying the fact that milking the dairy cow is a very important phase of her management. Even many who fully recognize this, have to admit that they cannot get as large yields from their own cows as some of their hired help. Like the production of music or poetry, the expert operator requires to be born such—there is little hope of the manufactured article becoming an ideal performer. At the dairy shows, the writer has watched with a good deal of interest the men who milk the cows that are on test. These men are doubtless selected for this work because of their ability to get the last drop of fat and the last ounce of milk the cows are capable of giving. Invariably, they are rapid and businesslike in their movements. Usually the slow milker is a poor milker and fails to secure the best results. Of course, there are many cows not over-sensitive that will do well with the average man. But the highly nervous cow, often among our best producers, requires a specialist. Such a milker is careful to observe the many little details that appeal to the cow and help to produce a proper nerve stimulation. He will insist on milking his regular number of cows himelf, instead of changing about with the other milker. Moreover, they must be milked in the customary order and at the same time each day. He will also see by careful manipulation that the animal has been milked dry. Carelessness in this respect means considerable loss in succeeding milkings. The man who milks the cow has a greater influence on her capacity than he is usually credited with.

FEEDING COWS REQUIRES TACT OF OBSERVATION

In a manufacturing plant each machine turns out as much of the finished product as it is capable of turning out and to do this it must have the required raw materials in proportion. The dairy cow is in a sense a machine and to a very great degree her output depends upon the feed. But there is another way of looking at it. The amount of feed which may be profitably given the cow depends largely upon her production. The quantity of food must naturally be regulated according to the yield of milk. A cow giving 60 pounds of milk per day requires more feed than one giving 20 pounds per day. Yet there are many herds in which each individual animal gets the same amount of feed regardless of the amount of milk produced.

Like the machine there is a limit to profitable consumption with the cow. If a cow gives three times as much milk as another on the same amount of feed, and cow giving the larger quantity is fed enough to maintain the animal body without loss, the cow giving the lesser amount must make poor use of her feed, must waste considerable of it in indigestion and must be an unprofitable animal to keep in the dairy. Where all cows are fed alike some of the animtls must get an in-

The Government's Advice to Farmers on Cows



In the interest of every farmer and dairyman the Dominion Government has issued a special circular pointing out the value of the Milking Machine under the present conditions of labor on the farm.

Mr. J. H. Grisdale, B. Agr., Director of the Dominion Experimental Farms says, "The present is no time to let things stand in the way of increased production, and every farmer with a herd of twelve or more cows should seriously consider the installation of a milking machine. Three years' experience of mechanical milkers on the Central Experimental Farm shows that cows do not dry off more quickly than when milked by hand. Cows have no more objection to being milked by a milking machine than to being milked by hand."

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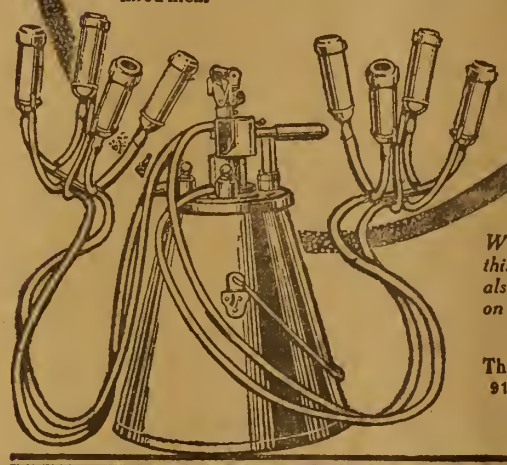

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sufficient quantity, others must be overfed and very few in the herd receive the right amount for the best results.

The partially starved cow must have a weakened mammary gland and the decrease in milk flow is accelerated thereby. Not only does this have a detrimental effect upon the cow herself but exerts a marked influence on her progeny. The mammary gland of an overfed cow becomes fat and thus her productiveness is injured as well as that of her offspring. Feeding should then always be individual. That is food should be fed to the cows proportionate to the amount of milk produced. Provided the cows are in good thriving condition the quantity of food given should be such that they neither gain nor lose in flesh.

In large herds it is not an easy matter to feed each cow a different amount according to the quantity of milk given ,but this may be approximated by dividing the herd into groups each individual in a group giving nearly the same amount of milk. It is comparatively easy to group the cows with respect to production and thus with respect to feed. Every herd of any size contains animals which stand practically the same as regards production. These do all right fed the same quantities. But every herd also contains groups of animals vastly different as to production.

There is the 3,000-pound cow, the 5,000 to 6,000-pound cow, the 8,000 and 9,000-pound cow, and the 10,000 to 12,000-pound cow. Grouping the animals according to production for feeding purposes, while not exactly individual feeding, is very near it, if the grouping is properly done, and cannot help bring an improvement on collective feeding. It stands to reason that it takes more feed or energy to produce 12,000 pounds of milk than it does to produce 6,000 pounds and that the cow producing the latter amount required more feed or energy than the one from which only 3,000 pounds of milk is received in a year.

Feeding should also be done with a view to the quality as well as to the quantity of the finished product. Dirty mangers or feeding troughs, musty and strong scented food have a very bad effect upon the milk and butter and too much care cannot be taken to eliminate all such conditions from the feeding of the dairy cows. The success with the herd depends very largely upon the success of each individual going to make up the herd and the success of the individual depends on the feed and care given, such feed and care to be regulated to suit the individual and not a general average for the entire herd. W. H. L.

TO MAINTAIN HIGH STANDARD OF MILK

Milk would never sour but for presence of bacteria and the bacterial content of milk is governed by three factors.

First, is the initial contamination which in substance means carelessness in milking. A dairyman's business depends upon the quality of milk which he sells. A little more care in cleaning the udder and sides of the cow, and using a narrow top milk pail would soon establish a reputation for first-class milk.

Second, the temperature at which milk is kept until delivered to the consumer. A maximum temperature of 50 degrets F. should be insisted upon.

Third, the age of the milk, or the time which elapses between drawing the milk and its consumption. The older the milk the higher the bacterial count. These three factors constitute all that there is in production and delivery of first-class market milk.

Your need of a
DE LAVAL
CREAM SEPARATOR
is greater right now than ever before

These are the days of the full milk pail.

But if you are trying to get along without any cream separator, or with an inferior or half-worn-out machine, the more milk you get the more cream you lose.

And no farmer can afford to lose even a little cream when butter-fat is selling at from 40 to 50 cents a pound.

With butter-fat at present prices, and our country begging us to stop waste, "cream slacker" methods of skimming milk must go.

Get a De Laval right away and put all the cream in the cream can.

There is no other cream separator that can compare with the De Laval in clean skimming, capacity, ease of operation, freedom from repairs and durability.

Order your De Laval now and let it begin saving cream for you right away. Remember that a De Laval may be bought for cash or on such liberal terms as to save its own cost. See the local De Laval agent, or, if you don't know him, write to the nearest De Laval office as below.

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LARGEST MANUFACTURERS OF DAIRY SUPPLIES IN CANADA
Sole manufacturers in Canada of the famous De Laval Cream Separators and Ideal Green Feed Silos. Alpha Gas Engines, Alpha Churns and Butter-Workers. Catalogues of any of our lines mailed upon request.
MONTREAL PETERBORO WINNIPEG VANCOUVER
50,000 BRANCHES AND LOCAL AGENCIES THE WORLD OVER

STERILITY

Sterility, or impotence, is inability of the animal to reproduce its kind. Such an animal is known as a non-breeder. In the male, impotence is usually due to an absence of the spermatozoa, or male cells. This condition is associated with advancing age or excessive service. In many cases it is due to a peculiar condition of the individual. The best treatment for this condition, which is so often due to debility, is rest and nourishing food, combined with tonic medicines. There is no specific treatment, and all hope of recovery is based on the strengthening and toning up of the whole system.

MILK SECRETION

After an animal has given birth to young, if three is a scant secretion of milk, she should be given plenty of watery food, such as bran mashes and other sloppy food, as these tend to increase the milk flow, and they have a laxative effect on the system. When the udder si swollen or inflamed, soft, watery foods should not be given. The milk may be altered in any one of several particulars. Many times there is little or no fat in the milk. This is caused many times by improper food, such as bad hay or corn stalks. The food should be of the best quality and easy to digest. The animal should be examined as to whether or not any disease interferes with its health.

LIVE STOCK.

MANY GOOD COWS HAVE NEVER BEEN GIVEN A CHANCE

While there are many excellent individual animals and many splendid herds here and there over the length and breadth of our great Dominion, it is well known that the average herd is a long way below what it should be and the worst feature of the whole business is that it is likely to remain so unless many of our farmers and dairymen get a new vision of the possibilities of improvement that are to be found along the highway of energy and application. There are several things that operate against improvement. One of the most formidable of these is Lack of Worthy Ambition. There may be such a thing as being over ambitious, but this rarely happens and when it really does is more often the result of an unworthy objective. Every man should be ambitious along some worthy line; to be anything less is to be practically dormant, unprogressive and even lazy. The dairyman who is satisfied to drag along with a three or four thousand pound per cow herd should get off the highway of progress and out of the way of progressive men so that, not even his influence will be allowed to impede the onward march of those who have got a vision of better things, and who are pushing forward toward the goal of their ambition.

What is the reason that so many men drift along in this state of apparent indifference without putting forth any effort to keep up wtih the procession that is forging ahead toward the goal of success? It is not because as a class they are lazy. Here and there one of a lazy nature may be found, but the majority are hard workers. The fact seems to be that they have got into a rut and the tendency is to think there is no other way so good as the one they are in. Their fathers did things that way and it is good enough for them. What such dairyman need is an educative bomb to throw them out of the rut on to some higher ground, where they can see the other fellow with less hard work and grind forging ahead and making a success of their enterprises.

The second step in the progressive march, is Better Care of the Herd. There are many good cows all over Canada that have never had a square deal; or in other words that have never had a fair chance to demonstrate their ability as producers. It may seem a pretty strong indictment to say that the majority of dairy cows in Canada are not half-fed, but this is literally true. Large numbers of them are milked within eight or ten weeks of calving, if they will give milk that long, and then dried up and fed on straw and hay with very little, if any, roots, meal or ensilage. Again many of them are kept in cold, dark and ill ventilated stables at night with very little bedding between them and a cold dirty floor and then turned out in the barn yard all day in zero weather to shiver around an old straw stack or rub their lice and mange infested skin against a stone wall or the corner of an old rail fence. Then after two or three months of that kind of treatment they are expected to bring into the world a strong healthy calf and be in good condition to go on to grass for a full summer's work at the pail and because they "fail" the owner wonders what "ails them."

What such a farmer needs is a vision of somebody's herd that has been kept in a nice, clean, well lighted, well ventilated, and well whitewashed stable since early fall; that has been fed plenty of good alfalfa or clover hay, corn ensilage, roots and meal with a bunch of good straw to pick over and then to throw under them for a good bed on which to lie night or day, while the snow flies and the mercury goes below the frost line; that has had good wholesome water within reach all the time, where mangers and gutters have been regularly cleaned every day, and the cattle with hair and skin soft and clean from the frequent use of the curry-comb and brush; where flesh, fat and energy has been stored up to support the cows through the trying experience of parturition, to bring forth healthy, vigorous calves, to make large capable udder, and to enter upon the yearly work as dairymaids with all the vim and vigor that is necessary to distinguish themselves in the Record of Performance or any other endurance test.

But of course these men must have the right kind of a cow. How shall they get them? Well, there are two ways. First, if the herd is fairly good, they can pick out the best half, and get rid of the others for beef or in any other possible way, and then select as many good ones as the money will buy. If that does not get all that one can keep and feed well, get some more money. Borrow it if there is no other way, and get a few more; but not to many; use them rairly and give them a chance. Then get a pure-bred bull from a producing family and raise the heifers from the best cows or from all the cows, for all should be good, and as quickly as possible supplant the poorer ones with the best heifers.

The other way is to sell off the old worthless herd for beef as soon as possible, and invest the money in good business cows that under favorable conditions wil not give less than 9,000 pounds of milk in ten months or 300 days. Unless one has pretty good stock on which to grade up this is the quickest and best way, especially if one has the cash with which to secure good stock, and a suitable place to give them proper care. If he can then add to the list a few pure-bred cattle of the right kind, or all of this kind, so much the better, providing he can secure them at reasonable prices, free from disease, from good families on both sides and in good condition. His revenue will then begin almost immediately both in milk products and in registered stock to sell. But success in this line will depend largely upon adaptiability and no man that his not tested his ability out on this line should lauanch heavily in this kind of stock unless he has money to risk, and will not feel the loss if he does not win out.

There are always plenty of cattle of all kinds in the market with which to make a venture either in pure-breds or grades. Many auction salrs of both consignment and dispersion character are always being held. Many animals of very fine breeding and of individual excellence are in these offerings and parties who contemplate improving their herds should attend these sales and look over the stock.

Not only are there females with fine records that will do credit to any herd but there are also bulls with good long family pedigrees behind them which would be a credit to either grade or registered herds. Why not get out of the rut, take one of these home, join the procession and win in the war of good breeding by overcoming the scrub.

MORE MILK & BUTTER
Has no Equal as a Butter and Milk Producer
Milch cows need food rich in nitrogen for two reasons, to rebuild the ordinary waste of tissues and to secure the protein necessary for the milk. This is why nothing can equal "Maple Leaf" Oil Cake as a producer of butter and milk. It increases the flow of the milk and adds to the richness of the cream. Made by the old process and guaranteed absolutely pure. Contains over 35% protein and 33% Carbo Hydrates.
This splendid food is so rich in protein that British Farmers send four thousand miles to secure it.
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CANADA LINSEED OIL MILLS, LIMITED
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CARE OF DRY COW LARGELY GOVERNS HER WORK AT PAIL

During the period the cow is dry it it usually the case that she does not receive as good care ond attention ss when she is milking regularly, but this is a great mistake. The cow must have a rest from milk secretion and during this time she should have the best of feed and care, because her system has become run down by the past ten or eleven months' work in the production of milk and butter fat, and the demands made upon her by the calf she is carrying. The better we care for her when dry, the better she will do when she again begins giving milk.

It is the nature of the cow to go dry, and she will usually do it of her own accord. But why is it her nature? Just as it is the nature of a Jersey to conform with the Jersey type and a Holstein to be black and white. It is a characteristic which has been bred into her ever since the beginning of the dairy cow. This does not mean that the men who selected and improved the breeds selected cows which would go dry for a certain period, but they did select cows that would give a large volume of milk per year, and do it for several years. The heavy milk producing cow that is milked right up to calving year after year and not allowed to rest usually becomes worn out in a few years, owing to the great and continuous strain on her constitution.

We have on our farm at the present time some deep milkers that would give milk from one calving to the next if we should continue milking them, but we always allow them a period of rest. We consider six weeks long enough for any cow to go dry. The cow that remains dry for twelve to sixteen weeks is usually a poor one.

The ration for the dry cow should be formulated with three things in mind, namely, to furnish a sufficient amount of protein to develop the fetus properly and allow a surplus for the needs of the body of the cow; to supply enough carbohydrates that the cow may lay on a little fat; and to supply succulence. Some kind of green feed is very essential in the ration for the cow at all times. It serves for the purpose of maintaining the bowels in a loose condition, which is necessary to good digestion and assimilation of food. Corn silage is undoubtedly the best feed to supply succulence although in the absence of this it may be supplied by dried beet pulp or roots. Alfalfa hay, clover hay, cottonseed meal, oil meal and oats are most common among the protein feeds, while the carbohydrates portion of the ration is usually furnished by the corn plant or other similar feeds.

The dry cow must have plenty of good water and on very cold days in winter it is a good plan to warm it just enough to take the chill off. When cows are forced to drink ice-cold water in zero weather they will turn away from it before they have consumed enough to meet their requirements. If salt is sprinkled over the fodder portion of her ration or otherwise supplied at intervals of two or three times a week it will assist in keeping her system in good tone.

The stall in which she is kept should be supplied with good bedding, which when soiled should be removed and a fresh supply added. When the weather will permit the cow should be allowed to remain outside of the barn and not kept confined all the time during the few weeks she is resting from milk secretion. Sunshine, fresh air and exercise are quite necessary to the well-doing of any mother during the period of gestation and the dairy cow is no exception. It is needless to say that the most kind and gentle treatment is very important.—W. H. U.

CLEANLINESS AN EXCELLENT VIRTUE ABOUT A DAIRY BARN

Each year there is bound to be accumulations about the farmyard that will need cleaning up and ridding out in order to keep it in the very best and most sanitary condition. The time for making a thorough clean-up, as I have found it, is just before preparation for spring work begins. Then it is possible to destroy all germ-laden filth that may have accumulated and fill up the low places with good clean soil so there will not be a cesspool at the stable door. For my part I prefer the use of a wheelbarrow in cleaning my stable and have the manure a little

distance from the stable door.

Decayed manure, cesspools and slop are breeding places for flies, and these are the worst germ-carrying agents the farmer has to contend with. Stagnant water is the breeding place of mosquitoes, so I have found it best to fill in all such unnecessary low places about the farm yard witha two-wheel scraper. I use a covered barrel on wheels for the accumulation of garbage at the back door, so that I can remove it to the pigs at regular feeding periods each day. This helps keep the yard clean and does away with a good many flies that bother when an open garbage can is provided.

DIRTY CANS CONTRIBUTE MORE THAN DIRTY BARNS TO MILK CONTAMINATION

Because you can see the dirt which falls into milk at the barn, it has been believed that the barn contributes most of the contamination. But "it is the utensils, rather than the barn, which are largely responsible for the excessive bacterial contamination of milk" says Bulletin No. 204 of the Illinois Experimental Station. For instance, when all the utensils used for handling the milk at the barn were thoroughly steamed, the bottle milk contained only 5,000 bacterial per cubic centimeter, but when the steaming was omitted, the milk frequently contained several hundred thousand bacteria per cubic centimeter. It takes a little more than sixteen cubic centimeters to make a cubic inch.

The cans used for shipping milk, when they are washed at the dairy and returned to the farm without being steamed and dried, usually add many times the number of bacteria to the milk that barn conditions do. The greatest contamination comes from complex apparatus such as botttle fillers. This suggests that the separator, unless it is very carefully washed, is the source of trouble in much of the milk which spoils sooner than it should.

Freshly washed milk cans still harbor large numbers of bacteria. Many persons believe that when they have washed the milk utensils in the ordinary way they have cleaned them of bacteria.

According to the dairy department of the University of Illinois, freshly washed milk cans contain, per can, more than a billion germs; some cans washed at the dairy contained as much as a hundred billion bacteria. But in ordinary practice milk is shipped to the city or to the dairy from the farm. The cans are returned washed and steamed, with the lids on. These cans may stand for two or three days before they are again used.

In order to test the effect of this holding after being washed, the experimenters took 160 eight-gallon cans; 100 of these were steamed, sixty were left unsteamed. The steaming consisted of holding the cans over a jet of steam fifteen pounds of pressure for twenty-five seconds. Cans so steamed are practically bacteria free. Fifty of the steamed and fifty of the unsteamed cans were inverted on a rack with the lids off. The other fifty steamed and ten not steamed were closed immediately after washing. All the cans were then left in a room at a temperature of about 65 degrees for thirty hours.

The cans washed, steamed, uncovered and inverted were dry and fresh, free from bad odors and the number of bacteria was small. The fifty cans washed, steamed and closed were still wet; most of them had a more or less pronounced odor. These cans had a much greater number of bacteria than the unclosed fifty; if the cans had been filled with milk its germ content would have been increased by 1,816 bacteria per cubic centimeter.

The fifty cans not steamed, but uncovered and inverted, were dry, had no particular bad odor, but the number of bacteria found in them was much larger than that found in the steamed cans. It was shown that the destructive effect of drying upon the germ life in the cans was marked, for there were fewer germs left in the cans after drying, when unclosed for thirty hours, than when filled with milk immediately after washing.

The ten cans that were washed, not steamed, and covered and held thirty hours had a decidely bad odor, and contained enormous numbers of bacteria. The conclusion is that if cans are washed, steamed and then left uncovered in a clean place to dry, the best conditions will be had.

In a somewhat similar experiment with bottles, it was shown that when quart milk bottles were washed but not steamed and allowed to stand twenty-four hours, they they contributed twelve times as many bacteria to the milk put into them as did bottles filled immediately after washing.

Similar and extensive trials to discover the relative bacterial contribution of steamed and unsteamed pails, strainers and cans showed that the unsteamed utensils contributed sixty-four times as many bacteria as all other sources of contamination. At another barn the unsteamed cans gave 103 times as many bacteria as the steamed cans showed.

THE DAIRY SIRE THAT IS BRED FOR PRODUCTION

When dairymen say an animal is "bred-for-production" they mean that the animal's ancestors were high milk and butterfat producers. His sire and grandsires, for several generations back, have produced offspring that have made good records in milk and butterfat production; his dam and grandams have been good producers and good breeders as well.

The pedigree should show all these points very plainly. It should also show that some of the ancestors of that particular sire were excellent inhividuals, and were winners in national shows. The better the records and the more near relatives with good records, the better the pedigree.

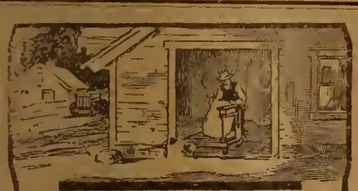
Many an animal has a fine pedigree but is a very poor individual. The right dairy sire should be a good individual, as well as have a good pedigree. He should be fairly typical of his breed, and show capacity, size and quality.

The real value of a dairy sire to any herd is told when his daughters freshen. Then we are able to tell whether or not he is improving the herd. If the daughters are better producers than their dams were at the same age, we are on the right track. A sire which does not improve the herd, and whose daughters are not better than their dams, should be sold at once. The sire which does not improve a herd should either be kept in the herd or sold to someone who can use him as a breeder. . aMny good sires have been sold to butchers before their real value became known.

The dairy sire should be grown well from the day of his birth and not be allowed to become stunted—size is one of the important qualities in a dairy sire. In winter, silage or roots should be fed but only in small quantities. A growing bull sometimes should not receive more than five pounds of silage a day, and when full-grown not more than 10 to 15 pounds. Too much silage may cause him to become an uncertain breeder. A good ration is—silage 8 to 15 pounds, hay 10 to 12 pounds and from 2 to 4 pounds of a grain mixture consisting of three parts of oats and one of bran.

To be healthy and good tempered a dairy bull must have plenty of exercise. A roomy, well-fenced paddock where he can exercise at will, will pay for itself in good results. A heavy block hung in the centre of the paddock that he may play with makes a good exerciser. Have the stall clean, light, and well ventilated and have it large enough so that he may have his head free when lying down.

A bull sould be handled from the time he is six months old. If handled when he is young he will give less trouble when he is older. Put a ring in his nose when he is a year old and always use a staff in handling him. Never trust a dairy bull. He is a bull and ilable to do damage at any time if givena chance. Always let the bull understand that you are his master—but be kind as well os firm.



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Fairbanks Portable Farm Scales are compact and absolutely accurate. The platform is 34 x 25½ inches and has a clearance of 11 3-8 inches above the ground.

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With the railroads congested with war traffic, no manufacturer can guarantee prompt deliveries very far ahead.

Be forehanded. Allow for freight delays and uncertainties. Give yourself time to erect your silo properly.

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THE HORSE

SKILL REQUIRED TO GIVE CARE TO GRASS FED AND PARTIALLY IDLE HORSES

There is no better way to get acquainted with the horse's needs in his domesticated life than by fully realizing the qualities and desires he has inherited from his wild progenitors. Whatever condition the farmer places him under in using him as a factor of economy and utility on the farm, he must fulfil, in as far as he is able, all that nature demands in his treatment.

Meantime, after the strenuous work of spring has abated somewhat, there is the short period of time when the horse gets a little experience of the open and free life of the field he is so fitted by nature to enjoy. In the prairie life his progenitors had the advantage of a choice of pasturage over areas extending to thousands of square miles. Their fleetness of limb enabled them to scour the country and follow tender vegettoon as it grew. The very fire and spirit which breeders wish to cultivate in the domestic horse comes from the life as it was generated on the prairie. It is the lingering innature of feeding. Many of these conditions can be imitated at this season while the domesticated horse is enjoying the free life on the prairie.

On not a few farms that have come under the observation of the writer the horse that ought to be enjoying respite from the heavy labor of spring is subjected to another form of slavery by being enclosed in a fenced field of weeds and worn out pasture. In treatment like this there is no chance for the horse to regain the lost energy and flesh through hard work at tillage and seeding.

From the general appearance of the average horse on the farm as spring approaches, he badly requires the best summer conditions to bring lustre and life to his ill-fed condition of winter. Too often he arrives at the springtide in bad shape for work, and generally would require all the summer to recuperate without the intermediate period of work between winter and summer. Few farmers know or realize the fact that horses that have long spells of idleness and long spells of work require more skilled attention and thought than the horse that is in harness all the time.

Where the Horse Thrives Best

If a horse has to do the spring work after a winter of half starvation or careless attention, and then gets the poorest pasture in the summer as his reward, what hope is there for the breeding of the best class of horses, a work so necessary to the welfare of the country and to the interest of the individual farmer.

The horse does not require luxurient pasture, he loves and thrives best on the young growing colver and mixed pastures of good quality. A pasture of this quality that is just recovering from being eaten down by cattle or sheep is best adapted for the horse. It is a fact that this has been noted in seep raising countries that the horse seems to favor the pasture that has been eaten down sheep.

The portions of the fields that are in the best state of cultivation is generally found to be the place where the horse grazes. Low lying, weedy and wet pastures are not relished by horses, and if forced to feed on these they become a serious source of danger to the health of the animal. It is in the farmer's own interest, and, to say the least, it is only humane to look out the nicest spots of pasure for the faithful horse. It will repay ten fold in motive power on the farm and in money profit, for feeding and attention to the likes and dislikes of the horse is a valuable supplement to good breeding. Careless attention to this detail in horse attention will destroy the good work of high class breeding. This observation has been made previously in these articles, but it is a truth of so vital importance to live stock breeding that it cannot be too often kept before farm readers.

Working the Horse on Grass Ration

When extra work or a hurried jog is required of the horse during the time he is on pasture, the system of doing it is often injudicious. He is generally taken from the field after he has been in it a few days or weeks and is hurriedly hitched up and started at some arduous duty. It would be far better to take the horse in the previous evening, or at least a few hours before his work is started.

Another precaution to take in summer time is the watering of the horse. Always give the horse soft water to drink, and not too cold. Instinct or experience has made the horse conscious of this, for he will never drink hard or cold water if he has access to soft water; he will leave the most transpareit anr pure water of the well for a river, although the water may be of the mudiest quality. Hard, cold water acts on the sensitive coat of the stomach injuriously, often giving gripes or colic.

Another custom that some horses are subjected to is that of bolting hurriedly a feed of whole oats when they are taken from the pasture and before they are hitched up. This is usually done to horses that are said to "hard to keep." Some animals are said to be more "easily kept" than others. This usually depends on the greater perfecttion of their digestive organs. They assimilate all the nutriment there is in their food, while a horse that is "hard to keep" will generally be found to pass with his excrements a considerable percentage of undigested aliment. In a case where a horse belongs to the class that is termed "hard to keep," it is better to give him grain feed in a ground condition, and when his stomach is empty and not full of grass. The dgestive fluids will act on it more easily, allowing at the same time a moderate quantity of water. A horse of this variety will be benefited by a mild tonic as he is put to grass.

It must always be remembered the horse has but one stomach, and it is a small one for his size. When he is subjected to lengthened hours of labor he gets very hungry. In feeding in the winter time this can be regulated, but in the summer time when the horse can take his fill of grass he is apt to take too much if let out to grass hot and tired. He should be kept in the stable till cool, and should be groomed and fed some oats or hay before he is let out to pasture.

The care of the farm horse at alll times is one that demands some skill and much of the mortality and disease found among horses is due to a lack of attention or study of the conditions that fit the horse organism.—O. V. J.

FIT HARNESS TO HORSE AND GAIN BEST RESULTS FROM HIS PULLING POWER

Bad fitting harness is a great waster of feed and horse power. The high spirit and muscular activity accomplished by intelligent management in breeding and feeding, gets a rude check when hitched to the farm implement with hard and illfitting harness. However, faithful and willing the animal is to generate his maximum amount of power, he cannot be expected to accomplish his alloted work if undergoing pain. From a humanitarian point of view, it is a crime, as well as a short-sighted farm policy. Pain in the horse brings its own punishment to the farmer. It is a loss to production, that no available manual labor can supplement. There is evidence on every hand among horses on the farm field and city street of the positive bad usage that thew are subjected to by ill-fitting equipment. There is more cruelay and loss in this department of the idustry than the average farmer is aware of. The dumb animal speaks forcibly of the crime perpetrated against its own and its owner's best interests, by changed conformation and lack of spirit in the work.

All the injuries to horses, such as poll evil, fistulous withers, shoulder sores, are mostly caused by ill-fitting harness, and van easily be avoided. Poorly fitting collars and neglect of their parts themselves are potent causes of shoulder and neck troubles. They are a common source of pain to the horse, and sheer carlessness on the part of the teamster is the only cause. For efficiency in pulling power the teamster must fit the collar to the horse, and not the horse to the collar, which we see so often attempted.

At the noon-day hour all the harness should be taken off. It is sheer nonsense for the teamster or farmer to say there is no time left him at midday to look after the harness or the horses' soulders. A ten minutes chore at mid-day will conserve many times over the ability of the horse in the field. It is more necessary than any ither work in connection with teaming that the harness be removed and the padding of collar cleaned, dried and aired in the sunshine. The skin below the harness gets cooled off, and opportunity is given to clean and brush the parts.

The spring time finds the horse shedding its coat of hair, and this makes it all the more necessary to exercise more care in keeping him clean with brush and comb. Old hair, dandruff, dust and sweat make up a combination that irritates the tender skin in the process of removal and the badly fitting collar completes the job of spoiling the shoulder and lessening the pulling power.

The necks and soulders of horses are found to differ about as much in shape as those of people, so a collar fitting one horse is oftentimes a misfit for another.

Every horse should have its own collar, in fact, all the harness sould be fitted to each animal. The throwing on of any harness that comes first to hand on any team that is chosen to be hitched up is aonther source of waste om horse power. How fould the teamster feed if the same treatment were meted out to him in the matter of his daily attire, or working equipment? Blistered feet would only be one of the results; it's more than probable that total incapacity would be the finishing touch.

The care of these important parts of the horse's body is simple enough if the proper care is taken in fitting the harness. In hot summer weather it is good practice to wash the shoulders and necks of horses every evening

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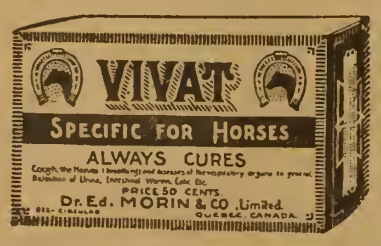

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when the collar is removed. It sould never be done just before the animal is to be worked. for the skin should always be dry whei the colar is to work upon it. Cold salt water. water with a little vinegar added, or about one per cent, alum water, are good washes that will toughen the skin. If the skin is broken, salt water should not be used.

As the season progresses it will be necessary to readjust the harness as the horses get thinner.

Shoulder sweeny. and abcesses are formed when the collar is too wide and stands away from the side of the neck. The best way to know the right length of collar is to hold the animal's head at the natural position when pulling andinsert the hand between the collar and the breast or throat. If there is just room for the open hand to slip in between. then the collar will be the correct length. A collar too long will bruise the shoulder points and o collar to short is apt to choke the animal and will blister the whole surface on which it presses.

Tight girthing is never necessary, and the breeching should hang in the right place and be just tight enough to come into play when the tugs are slack.

Teh cultivating implements must also be kept in good working shape, if the full utility of the horse is desired. It has been found on trial that a blunt share reuqires a third more pulling power from the team than a sharp one. Besides sharp shares, sharp reaper blades and well oiled machinery reduces the cost of horses' power, and the groans from the wagon wheel for lack of grease comes as a curse on the industry, as it is carried on by the indifferent teamster.

BOT FLIES THAT TORMENT THE HORSES

Along about this time of the year, the horses are bothered a lot by the bot flies. These flies strike the animals under the chin and on the forelegs, and every strike means the deposit of an egg or "nit." Whether or not the flies actually cause the animals pain is no known but they are greatly annoyed, as is the man who is working them. It is probble that the peculiar buzzing noise made by the flies is what the horses dislike. but whatever it is, the nits they leave may become the source of trouble. These nits are licked off by the horse and hatch into bots that cause indigestion and stomach disorders. When grooming the horse the nits shoull be scraped off with a sharp knife or they may be destroyed by rubbing the animal with a rag wet with kerosene.

LEATHER WASHERS THAT ARE PLIABLE

The farmer who carries in stock a supply of leather washers for use on. pumps o rother machinery often finds the oil dried out of the leather and the washers hardened so as to be useless. Deterioration is always rapid if the washers are stored without protection.

A method of keeping them that has been found satisfactory is to pack the leather washers in a tin or galvanized iron box and cover them with melted tallow. It has been found that since these parts are made from an animal substance, the covering or grease used should also be of an animal origin. On removal from the pack these washers are sufficiently pliable for use.

THE FOAL

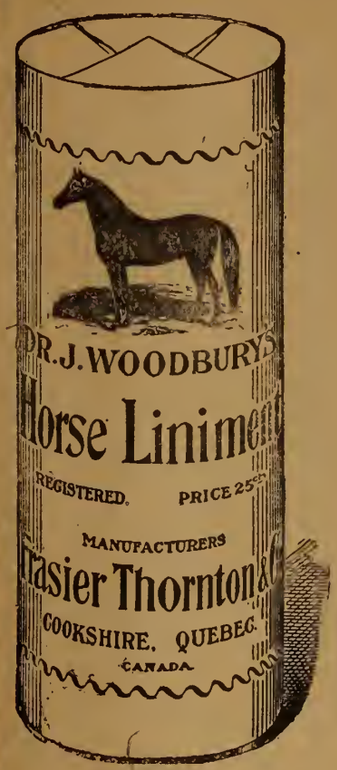
It is known to all experienced breeders of horses that much of the success of raising colts depends upon the care given the mare during pregnancy and at the time of parturition. The feeding and general care as to exercise and treatment are important factors in the rearing of good colts. Mares should have exercise in some form during pregnancy, either in the way of work, which should not be too laborious, or by allowing them to run out at grass, where exercise is had by constantly moving. But light work is the most healthful kind of exercise for mares, for the reason that they can be fed much more nutritious food by having work of this kind. Physic should be given the foal when artificialfood is fed, either castor oil or olive oil, to relieve the constipation that nearly always occurs. Colts are usually weaned at from five to six months old. Calves are usually taken from the cows two or three days after calving, as soon as the milk becomes normal. Pigs are weaned at about two months old, and lambs at three to four months. After weaning, the udder of the dam should be milked often enough to relieve the pressure and to prevent inflammation. When it is desired to "dry off" the dam, the udder should not be milked dry.

Pyemia, or blood-poisoning, in young colts is a disease due to infection by pus-producing bacteria. The disease usually occurs within two or three weeks after the colt is foaled. The early stages of the disease, pus collects in the pockets or swellings, and the joints are swollen in the affected region, with stiffness and difficult locomotion. If the pockets are not opened, the pus often burrows along the tendens and about the joints, and finally breaks and discharges as a thin yellow fluid from pockets that spread in various directions. The infection arises from a wound of some kind. In many cases the navel is the seat of infection. When this disease is neglected, the colt becomes dull, loses appetite, lies in the sun and grows weak. Death results when the animal is not properly cared for. All pockets containing pus should be opened freely and washed out with warm water, and a solution of corrosive sublimate 1-1000 Sol.) should be used. Or a solution of hydrogen peroxide may be used in washing the pus pockets after they have been cleansed with warm water. An infected navel should be treated with peroxide of hydrogen, or tincture of iodine, or Lysel.

TO BREED MILITARY REMOUNTS

The Mance Farming Co., Ltd., Mance, near Viking, Alta., purchased recently at Montreal, Que., a new thoroughbred stallion, for their stud, "Vance Guard", sired by the famous long distance champion, "Advance Guard." This horse is of splendid proportions and of exceptional size and substance. He has stood champion of the breed in Ontario and Manitoba.

The company, which is under the management of Joseph Lambert, the well known horseman of Edmonton, is going into the breeding of military remounts and the new sire should work in well for this purpose.



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How is the crate made? Almost any packing box wil answer for a temporary crate, but is better to make a good one that will last. The crates in general use are six feet long by sixteen inches wide by twenty inches high and divided into thre ecompartments. They are made of laths or slats nailed on a light frame.

What kind of a bird? The flesh of any bird is improved by finishing in the crate. Best results are obtained from cockerels of the general purpose and heavy breeds.

What is the best feed? Finely ground grains mixed with milk make the best ration. Oats, barley, corn, and buckwheat are all good. Two or three grains mixed together are better than one alone. Wild buckwheat screenings also make a cheap and satisfactory feed. Milk, preferably sour, or buttermilk, is very valuable for mixing feed.

Other things to remember.—Do not feed the birds for twenty-four hours after putting them in the crate, and then feed very sparingly for several days. Keep the birds hungry for two or three days and gradually increase until a full feed is given; then feed twice a day just what they will eat up clean. Clean out any feed left in the trough after each meal. Dust the birds for lice before starting, and again before killing. Kill by bleeding in the mouth and piercing the brain. Pluck, dry and cool before packing. Write Experimental Farm for Bulletin No. 88 for further information.—F. C. Elford, Dominion Poultry Husbandman.

REARING CHICKS

Taking chicks from the brooder.—When the chicks are sufficiently large that they spend most of their time outside the hover and the risk of cold nights is pretty well over, the heat may be removed from the broodes or colony houses and the chicks given the whole house. If there is any fear of chilling it is better to leave some heat even after it is thought unnecessary rather than to run the risk of chilling and overcrowding.

Rearing Coops.—If the brooder has been placed in a coop large neough to accommodate the partially grown chicks they can remain in the coop after the brooder is taken out. If the brooder is in a colony house this will make an ideal rearing coop for chicks, at least until they have grown to a considerable size when additional accommodation may have to be provided.

No matter what the coop is, see that it is kept clean and sanitary. Give plenty of ventilation without draughts. A flat roost or two will soon train the chicks to perch and will help prevent them crowding in case of cold nights.

Feeding.—It is not well to change the character of the feed too suddenly. If the change from chick feeds to cheaper feeds has not already been made in the brooding coop make a change gradually. If there is plenty of range the hopper feeding system may be largely introduced. Cracked or small grains may be placed in one hopper and a dry mash consisting of ground grains or a mixture of these with bran and shorts, placed in another hopper.

This year as last the basis of our feed for the growing chicks will be buckwheat screenings. These will be fed principally ground. in a hopper.

A better growth will be obtained if moistened mash is given to the chicks once a day. The same mixture as is used in the dry mash hopper may be utilized for this.

Milk of some kind is very valuable to the growing chicks whether it be buttermilk or skim milk. It can be given them to drink and used to moisten the mash.

If the moist mash causes too much labor the chicks will thrive well on the dry hopper feeds but see that they have plenty. It never pays to stint the growing hicks.

Range.—If possible give the growing chicks fresh range. This can be done by placing the colony house or coop in the orchard, in the pasture field, the corn field, the root field or any place where there is some green feed and shade. Shade is important especially during the hot season. If the chicks are being raised in smaller quarters or in back yards it is a good plan to alternate their yards, sowing something green from time to time. A few sunflowers or artichokes will provide shade and rye, rape or other green crops makes a satisfactor green feed.

Selling the Cockerels.—It is not always wise to wait until fall before the cockerels are selected and eaten or sold. Especially is this the case if the range is limited. Watch the markets. If prices are good for broilers kill off the cockerels as they are ready. Very often a two pound chick will bring as much as the same chick three months later when it weighs five pounds.

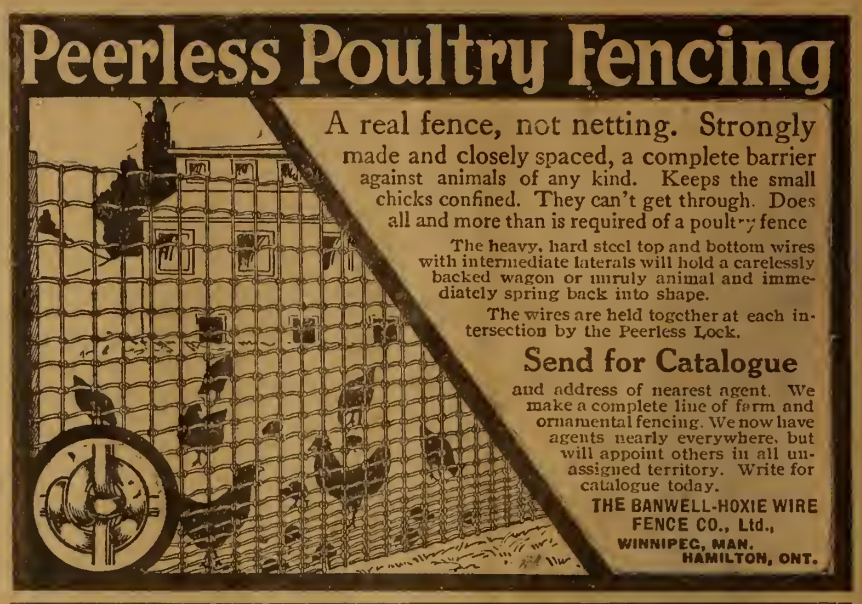
The early Pullets.—If the chicks are early and some of the pullets are showing signs of maturity it will be well to separate them from the rest of the flock. Give them special care and before they begin to lay put them into their winter houses. Too much care cannot be given the pullets at this time. They mean early winter eggs late this fall and next winter when the prices are the highest.

FEEDING MILK IN THE POULTRY YARD

Everybody who has given the matter attention has learned that laying hens to do their best and young growing fowls need animal food in addition to grain and roughage. There is no other way of balancing the ration. Pullets grown without animal food do not mature nor begin to lay as early as those provided with it, but on the farm beef scrap is too expensive. The feeding of meat would be a great handicap to poultry raisers if it were not for the fact that there is usually a plentiful supply of skimmed milk on the farm. This is a great advantage for experiments in all the agricultural departments of the various countries interested in poultry culture have shown that milk not only takes the place of meat but gives better results.

The overfeeding of meat or the use of meat not properly selected, while increasing the egg yield, lowers the fertility and the vitality of the eggs. Pullets raised on as much meat as is necessary for the fastest possible growth, do not make a good breeders as those raised on milk. For finishing off the cockerels thatare to be sold for broilers nothing beats a mash mixed with milk instead of water.

The best of poultry foods (milk) is greatly neglected because its value and right methods of feeding it are not understood. One day last summer I was saying to a farmer what I have just written. "You read that in a puoltry journal didn't you?" he said. "I read it too, and wish I hadn't. I put skimmed milk directly from the separator in the chicks' drinking vessel and put a panful out for the hens. It killed a lot of the chicks and made some of the hens sick, even some of the grown hens died. I don't think I'll follow any more of the advice printed in the papers about feeding poultry. Anyhow I'll feed no more milk."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There is no other domestic animal so susceptible to change of diet as a fowl. Even a change of grain will sometimes kill young chicks if they are given all they will eat before they become accustomed to the change and it will often cause hens to stop laying though not likely to kill them. Too much food of any kind will kill young chicks. Next to vermin, overfeeding is the chief cause of loss of chicks on the farm.

The above mentioned farmer gave his hens and chicks all the fresh sweet skimmed milk they could drink at the first feeding of milk, whereas he should have let it sour and then give them a little to start with and increased it gradually till they were sufficiently accustomed to it to drink all they wanted without injury.

One of the chief difficulties in poultry raising is the fact that there are so many little details in it, the neglect of which will mean disaster. There is little real difficulty in it but needs an interested close observer to see all the little things that count. The farmer I mention has his pullets growing more slowly than they should, laying later than necessary and his hens laying less than their best, because he failed to learn one must be cautious about a change of feed in fowls, especially when the change concerns something of which they are so fond that they are likely to overdo the matter.

There is no harm that can come to poultry from feeding sour milk properly. There are scientists who think they have proved that the bacteria which cause milk to sour destroy the germs of bowel diseases both in fowls and in men. Be that as it may, one is missing an opportunity who neglects to feed milk properly to his fowls.—W. H.

TURKEYS NOT HARD TO REAR ONCE YOU KNOW THE WAY

To be successful with turkeys one must understand something about their habits as well as their requirements. One must have a liking for the work and attend to their wants cheerfully. If the breeder has an interest in his flock, he can be assured of success. For many years I have raised flocks ranging from 15 to 50, but last year was my banner year. I have tried several varieties, but have decided to stick to the Bronze. This variety is possessed of strong vitality, they grow extremely large, are good foragers, and withstand the hard winters better than some ofher varieties. My only complaint of them is that they range at such distance that if they are not brought home at night they soon become wild and timid. But after they are half grown they can be practically take care of themeslves if allowed to run. This cannot be said of some other varieties I have raised.

My method is to allow the turkey hen to hatch out the poults and raise them. I have raised poults with chicken hens rather successfully, but one thing I have noticed in particular is that the chicken hen does not know the requirements of the little trukeys

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BRANCHES IN ALL CITIES

nearly so well as a turkey mother does and the little fellows have a much harder time ge tting started properly. They may be healthy but somehow they do not seem to grow as fast as those that are reared with a turkey hen.

One of the very best feeds for young turkeys is corn bread crumbled. The bread should be allowed to become hard and somewhat stale when it will prove excellent for feeding. Lettuce leaves and clover make up the green feed they require, but they must be fed in small quantities at first. We keep our poults in dry pens for a week and even longer sometimes, until they have plenty of life and seem strong enough to follow the hen without any trouble. On wet days they are penned up, and are never left out during the wet mornings when the grass is covered with dew. When poults are a month old they may be let run and the care that was so essential at first becomes less important as they grow older. However, during storms of wind and rain, I always make it a rule to get the poults shut up if we are able to get them. Sometimes they wander so far this cannot be done, and then the losses come, as we find some of them drowned. This often occurs when they are a fair size.

Turkeys should be fed lightly at morning, noon and night, but as they get older they will not come home for their noonday meal. However, they will be on hand at night if fed regularly. It always makes a breeder feel good to see the turkeys come home at night looking so well and strong.

There is a way of observing the difference in rearing poultry with turkey hens and with chicken hens. This is to raise some one way and some the other, noting carefully the difference in growth. Give the same feed and chance and you will find that the ones that stay around the house with the chicken hen do not grow lige the ones that wander with the turkey mother. Every breeder should make this experiment if he wishes to derive a profit from turkey raising.—Mrs. E. O. S.

BREEDING FOR EGG PRODUCTION

This is a time when more attnetion must be given to efficient work and economical production. This comes home to the farmer and poultryman, for the time has come when the cost of feeding is such an important factor that no man can afford to keep a cow or even a hen that is noe a profitable producer. For this reason we have got to give more attention to breeding and selection; if we do not, the profit from our good individuals will be eaten up by our low producers.

The breeding for egg production is not half as complicated a process as many believe. . To be sure, with the trapnest method it was, but in these times of scarce and high priced labor, one cannot afford to chase traps. It is the persistent layer that we want to find. Most any hen will lay through April, May and June, but the hen that commences at maturity and continues for 10 months is a good hen. If she lays without molting for 12 months, she is an extra good one, but if when moulting time comes she cannot spare the time, but continues on, perhaps will go into January, before moulting, that is the cracker-jack hen, the top-notcher upon which you want to put on at least two blue leg bands and keep her and mate her with the best shaped and most vigorous cockerel you have to raise your breeding cockerels for another year. It has been proven beyond a reasonable doubt that egg production is inherited from the hen through her sons. Thus the importance of finding this "high hen" to get breeding males from. To locate her is not so hard a task as might appear. It is simply a process of elimination.

Go through your flock the first of August and pick out all the hens that have commenced to moult. These are all slackers that have been waiting for an excuse to stop laying. Ship them to market, and the next day you will get just as many eggs and you will have materially reduced your feed bill. Do this same thing Sept. 1 and again Oct. 1. After that, keep all hens that were laying at that date but continue to cull until you have found the hen that has kept on her job the longest. This last hen is your way to success as far as breeding profitable layers is concerned, if you mate her to a good shaped and vigorous male and ues the cockerel from that mating to head your breeding pens.—H. M. Tucker, Chief, Bureau Animal Industry.

ENORMOUS ANNUAL LOSS IN EGG CROP

The conditions under which eggs are produced on many farms should be greatly improved; such improvement will result in a higher average annual price to producers, a higher grade product for the consumers and the elimination to a great extent of the present enormous annual wasteage of the egg crop. Very often the fowls are fed on unwholesome food, which affects the odor and flavor of the eggs. Meat spots, blood spots and bloody eggs cannot be avoided but they should not be sold with the rest of the eggs. Blood rings and rotten eggs are caused by having the males with the females during warm weather or when broody hens sit upon the eggs. Musty and mouldy eggs result from storing the eggs in bad places. Hair-splits, checks and leakers are caused by rough handling either at home or after the eggs have been sold.

Producers are strongly advised to keep the hens in comfortable, sanitary houses and give them clean nests at all times. Eggs should be gathered regularly twict daily in warm weather and once at other times of the year. The eggs should be stored in a cool, dry room at a temperature not higher than 60 degress F., and every precaution should be taken to keep the eggs out of the sunlight as much as possible. All mature male birds should be killed or sold as soon as the breeding season is over, and they should be kept out of the laying flock, except during the breeding season.—M. A. Jull, Macdonald College.

PALMER'S Summer Packs for the S.O.S.

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HANDLING BROODY HENS

The three principal means to adopt in breaking up broody hens are: Air circulating under the hen, plenty of water and feed for them to work on when they are restless, and the society of the flock. Use a coop with a bottom made of narrow slats or of laths, preferably on edge, and set this coop where the other hens work all around it, and have a water fountain and self feeder attached to the side. Seldom will one have to keep the hens in this coop for more than three days.

Breaking up quickly is important, for a hen is a laying machine, and it is necessary for her to keep up her vigor and condition to be laying at her best. To leave the hens on the nests a week or so they become poor and have the setting fever so well established they are much harder to stop, and it takes them longer to get back to egg laying. If the hens are taken off as soon as they stay on the nest over night it will be easy to induce them to stop, and then they go to laying again with almost no interval between. At the price of poultry feeds now it behooves us to have no unproductive intervals.

TO GET RID OF MITES

Clean out the house and thoroughly sweep, not forgetting the windows, walls and ceiling. When this is all swept out clean, use a garden hose or a stiff brush and hot water. See that everything in the cracks and crevices is washed out. After this is done allow the house to dry for a while, and if everything then appears to be clean, use a good disinfectant, and be sure that the solution is forced by the spray or brush right into the cracks and crevices.

If the mites are bad, use boiling hot water followed by coal oil and a liquid lice killer or lice paint. Be sure that this goes into the cracks and crevices and when you have gone over your house thoroughly according to the above treatment, in all probability the mites will be exterminated, but it is advisable in the course of three or four days again to inspect for the mites, and perhaps to repeat the dose once more.—E. F. N.

CONSERVING AND PRESERVING EGGS

The Poultry Department of the Agricultural College issued a bulletin on the above subject which contains information of value to every householder in the Province. The different methods of preserving eggs and how to prepare the solutions ode freely explained in this bulletin. Persons requiring information on this subject should make application for this bulletin at once.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B., solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's or-ganizations.

THE OTHER WIFE

(By Katharine Reynolds)

They had met suddenly in the fog in a little blind pocket of London. Jack Peyton was hurrying to catch a train which would meet a certain boat and he had only a minute. So he stopped, smiled, shook hands and said, "Hello, Mollie! What in thunder are you doing here? Jerry's in town—and the new bride—staying at the Cecil. I'm off to Constantiunople—have to make the next boat—say hello for me to everybody—good-by."

He was gone and Mollie walked on and through the gray gloom, with, "Jerry's in town—and the new bride" beating an endless merry chorus on her naked fog-soaked brain. And after a long gray while she found herself one gray atom in a long line of gray atoms that crawled through gray gloom into a ghostly gray ship.

The line of gray atoms dwindled, melted up the gray ship's side and soon after the boat moved. Mollie stood beside the rail and stared out into the fiendish fog, while the singing little devils sitting in thick rows on the top of her head kicked up their fiendish heels and beat their anvils and shrieked, "He's staying at the Cecil."

She decided to go to her stateroom. Maybe if she buried her head in the pillows she could smother the singing imps into silence.

She turned from the rail. It was over—the terrible danger of meeting.

As she passed from the muddy gloom into the brilliant light of the passageway, her eyes were blinded. She stumbled on the first landing and a man caught her. She looked up to smile her conventional thanks and smiled right up into Jerry's gray eyes.

"Why—Mollie, girl—" He paused and a change came over his face.

She was suddenly calm.

"I'm stumbling down to my stateroom Jerry, with one of my old headaches. It's just this etnernal fog and dead grayness."

"I'm sorry," he spoke more easily now. "Have the stewardess fill your hot water bag for the back of your neck and lie still and don't worry—about anything." He added the last two words slowly and she thought she understood.

As she went on she told herself that she had always known that if they ever met again, Jerry would be just like that—comfortable and friendly and sincere.

It didn't seem possible that they were no longer man and wife. That somewhere on this same boat was a girl who was Jerry's new bride. The whole thing was a preposterous, silly nightmare, a gray myth that would melt with the fog. It couldn't be—it couldn't——

But he had told her not to worry—about anything. How often he had told her that very same thing in the old days back there in the old white house. And she had never heeded him—used to fly into a rage of despair because he didn't seem ambitious enough. At the bitter end she had told herself that he had no brains, no ideals, no plans; just that maddening content, that childish faith that all things would come to them if they just lived sanely and contentedly from day to day and waited. But she had not cared to wait.

So she left the little hills and bits of woodland, the old white house, serene and wise with years; left old true friends and flower faces and went to new York where life boils at white heat and where—so simple souls believe—the feast is ever ready and every stray stranger is eagerly sought out and welcomed.

It was then that she found out her mistake. In those first three months she learned all and more than ever Jerry had tried to teach her.

She wanted to go back then. But the cruel pride that holds young hearts in bondage would not let her. And then, one day, se found out that it was too late; that Jerry was no longer in white house; that he had passed through the hot city and sailed away in a huge ship, out of the harbor, away from her and home shores.

He had passed through and she had not known—nothing had told her.

So then there was nothing but work to still the donging, fiill the hours and days and months—nothing else that could make her heart forget hunger.

Then one day when even great success left her homesick heart cold, she said to herself that she must go back, even though there was now nothing to go back to but the dear memories of an empty, still house. She was going back—going home— to wait for Jerry. Surely he would be as anxious, as homesick as she, as wounded perhaps. And when he came she would greet him and he would forgive. Life would begin anew.

But it was not to be. For the very hour that she was making her final surrender, the wires that bridge the ocean were ticking off a sensational message. They were saying that over in a Vienna laboratory a young American doctor, a big, simple gray-eyed chap from some little cornfield country town in America, had made a great discovery.

Already scores of folks were being cured, the most famous patient so far being the charming daughter of a well-known American statesman. Rumor had it that it was love for the beautiful invalid that had driven the young doctor night and day to seek the cure until at last he found it.

When Mollie read that cabled despatch, she knew that for her the best of life was over. And she saw, of course, the one thing left for her to do. So when the excitement of the new discovery had quieted down and people were watching other things, she very quietly gave Jerry his freedom.

This done she sat down amid the ruins and laughed a little madly. She had pitied herself in those lovely, lost days; had talked bitterly of her great talent dying perhaps without one chance of being put to the world's service.

Now she was successful. People told her so and borrowed her money. But compared to Jerry high up on his shining mountain top? No, no. Her business, so an ironical Fate had decreed, was to record Jerry's glory. She worked in dirty, dusty newspaper offices, read and recorded the ticking cable messages Jerry worked among the stars, in clean, healing solitudes.

So Mollie sat amid the ruins that day and laughed bitterly at herself and her old stupidity. For both their sakes they must never meet. That was why she had fled so frantically from London.

And now, Jerry was here—on the same boat. She had seen him. And he had told her not to worry—"about any thing."

Well, she wouldn't. Now that there was no need of obeying she would obey him and worry not at all.

With that she fell asleep and slept right on to six of the clock of the new morning. The fog was gone, the heavens wide and the ocean a glittering wonder of blues, grays, greens and full of gentle- silvery little white ruffles.

For the first time in four long years she felt glad and told herself stoutly that se was happy. She raised her arms and stretched them out to the wonderful old world that lay about her.

"Oh, glory, glory! Isn't it beautiful!" she said to the sailor boy who was washing the deck. And he smiled with her and nodded. And just then Jerry came around the corner looking as new as the morning. She stepped to the rail to give him free passage, but he stopped at her side and looked squarely into her eyes.

"Your headache is all gone, isn't it?"

"Yes," she laughed. "I did just what you told me to and here I am—well."

A little pain clouded his eyes for a minute and he started to say something, but changed his mind and stood quietly beside her looking over the smiling waters. She was trying to gather courage to say what she knew she must sooner or later.

"Jerry," she said at last gravely and frankly, "where is your little girl?"

"She's down in the cabin pretty sick." Then aftera while he added, "How did you know about—her?"

"I met Jack just as he was leaving for his boat. He told me."

Mollie was suddenly silent. But after a bit she made herself say, "Hadn't you better—couldn't someone—" Then she remembered and flushed painfully.

"No," he said curtly, "she wants to be alone."

Suddenly he said:

"Mollie, I can't wait to get home. I want to see if there is a pair of bluebirds in that old birdhouse I made and if the clover's as thick in the back meadow as it used to be and if that old fence near the barn is still standing."

Home to her now meant two rooms in a tall brick structure on a dully respectable street. But she strained the pain from her voice before she answered:

"I expect it will be all there Jerry."

"It's four years," mused Jerry, and his voice was so full of homesickness and remembered pain that Mollie's throat ached. "Four years. Mollie do you remember the evenings when we wouldn't have lights and the moonlight came in hrough the window and lay in squares across the living-room floor? And our grate-fire with a pine knot glowing and everything absolutely perfect and still, and the old clock ticking on the stairs?"

Would he never stop?

"Mollie, girl, it's great to travel and knock about odd corners of the world; to see and know things. But there's nothing, nothing that's ever as fine as the road back home. And when I lost that—and lost—you——"

In his old dear way he was explaining to her the little bride down in the cabin, how he came to get her, to still the longing, to ease his heartache. And Mollie understood and bore the little bride no ill-will.

Nevertheless her throat ached with smothered sobs. Yet she dared not show her pain, for if she did, Jerry would surely comfort her in the old sweet way and there wss the girl to think of, sick and alone in her cabin.

Jerry was continually forgetting the little bride. And Mollie could understand that, too. With all his thoughts back there in the old home. For the moment he had wiped out the years and was with Mollie again in the old white house.

This worried her at first and at every opportunity she brought in the bride.

"Is she all well now, Jerry—cured?" For the bride was, Mollie knew, the noted statesman's daughter.

"Why, yes, she's all right. She'd get over her seasickness if she'd only come up on deck. But she won't. Reads and sort of dreams in the cabin. Oh, I know how she feels and so I let her alone." Jerry smiled tenderly and Mollie felt her heart cramp for one blinding second.

"Oh, I tell you Mollie," and Jerry laughed a little, "I've learned a lot of things about women. If I'd known what I know now, you'd never have gone."

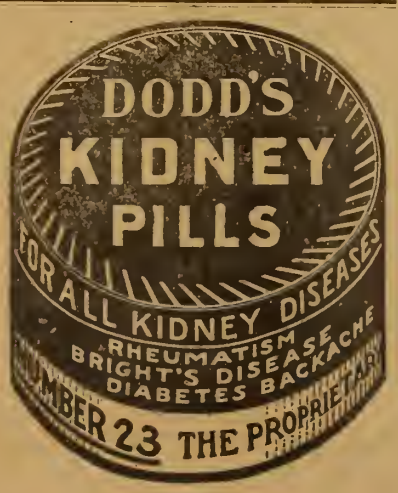
"No, Jerry." She hastened to shoulder all blame. "I was a fool, and there is no salvation for such."

Jerry's eyes darkened with pity and he gave her what he thought was rare comfort when he said:

"Ah, well—it's over and done with now. And we're going back, all of us. That's everything. Why, this is the road back home Mollie.

And she, knowing there was no such road for her, lifted the cup to her white lips and drank.

After that, things were easier. And when the bride came up at last, Mollie sat down beside her and talked, talked naturally and bravely and with a fineness and sparkle that surprised even herself. Jerry found them together



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one morning and seemed immensely pleased.

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And Molile smiled.

They were all sitting together when the shock came. There was no warning. just a terrible roar, then flying splinters and flames leaping high.

They stared stupidly for a few seconds, then Jerry said quietly, "There will be just enough time to get your valuables. I'll get the lifelbelts."

Five minutes later they were being crowded into life-boats. There was not a scream or a hint of panic anywhere. The officers were giving orders a little more sharply than usual and their faces were as white as their uniforms.

The ocean sparkled. the flames crackled and not a living soul made a sound until it was discovered that two life-boats had been splintered by the explosion and that there would be no escape for the officers and some of the men passengers. Then it was that the wail went up. Wives and babies screamed for their husbands and fathers.

Jerry helped the little bride into the boat, smiled down at her reassuringly and then turned to Mollie who had hung back and was now the last woman on board.

"Thank God, there is room for the last woman," murmured the relieved captain, himself stretching out hands for Mollie.

"No, captain, I stay right here. Give my place to Dr. Collins, here. Jerry," she begged, " you must—she'll need you,"

But Jerry smiled and shook his head and suddenly Mollie smiled too, and when the captain saw that smile he swore for he knew that his ship would go down with a woman on board.

They stood at the rail and waved to the bride and she waved back.

"She will be safe and happy," Jerry said and then he looked at Mollie in a way that made her forget all fear forever. "You should have gone, Mollie, girl, but I' mglad you stayed."

"Oh, Jerry, Jerry," she laughed. "I had to stay. Don't you see that it was my last chance to travel the road back home? We'll travel it now together."

"Yes—together," and he made sure that her life-belt was snugly strapped for he saw that in another second they would have to jump.

Mollie lay white and still in a steamer chair on board "The Silversand." Jerry was beside her. They had been almost the first to be picked up and Jerry was none the worse seemingly for his plunge. But Mollie puzzled him.

"Why, Mollie, girl, cheer up—rouse yourself. You're not hurt. There isn't a scratch o nyou. It's just the shock that's knocked you out. Fight it! In a few hours we'll be standing in New York taking the first train home."

"Home—home!" sudednly sobbed Molile; "that's where I was trying to go. Why couldn't they let me go alone? Why—"

"Why, Mollie," and all at once Jerry looked stricken, "don't you want to go home with me?"

"Jerry, boy—there's your bride—how can you——"

"My bride—my bride-" Jerry fairly screeched, then sat up and looked strangely at Mollie.

"My God, girl, have you been thinking all the way over that that child was my bride? You told me you had seen Jack; that you knew. Why, that girl is nothing to me; just a former patient. Jack married her in Berlin four months ago and they were starting for home. Wanted to get a home settled for the little one that is coming to them soon. Then his paper ordered him to Constantinople. He couldn't take her off there with him. I was just going home. I had been her physician. So he asked me to look after her."

Mollie was smiling foolishly and then she quietly and beautifully fainted away.

When the boat nosed her way into the home harbor, Jerry and Mollie stood at the rail prepared to be the first down the gang plank.

"We are going to stay just long enough to be married—that's all," he told her. "Tomorrow, girl, we'll be together—on the road back home."

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FRESH VEGETABLES IN THE DIET

The importance of fresh vegetables in the ordinary diet has, we think, been overlooked in the past by many farmers; their greater use may be urged on two grounds, as partial substitutes for meat and wheat in these war times and as wholesome, palatable, attractive adjuncts to the day's bill of fare, supplying mineral and other substances essential to good health.

As savers of meat and bread.—It cannot be claimed that fresh fruit and vegetables may be used to replace entirely the staple and more substantial foods, meat, milk, cheese, bread, for as a class they are poor in the body building nutrient (protein) and in fat, the most important of the nutrients in heat and energy production in the body. Nevertheless many of these have a distinct value as savers of meat and bread and in these times it is desirable, if not imperative, that they should be so used.

Prominent among the vegetables that may be employed to advantage to partially replace meat are **beans and peas.** These, unlike vegtables in general, are particularly rich in protein, though it must be admitted that their proteins is not in equal value in human nutrition with that of meat. Alone or in combination (milk-vegtable soups, chowder, souffe or omelet) they make nutritious, wholesome and palatable dishes, easily permitting a reduction of 25 per cent in the meat account.

Potatoes can be advantageously used to save bread; indeed, in spite of their somewhat low protein content they stand out on this continent as the most important substitute of the cereals. Roughly speaking, a potato of 4 ounces will furnish as much nutriment as an ounce of bread, though the latter will be slightly the richer in protein. They are essentially starch and being highly digestible when properly cooked may well be employed to furnish a large part of the daily ration for the production of heat and energy in the body. By the free use of potatoes, the quantity of flour ordinarily consumed—as bread, buns, etc.., may be easily cut down 25 per cent, without any discomfort to the family. They are cooked with practically no loss of nutritive value by boiling or baking in their skins. The outer skin with its immediately underlying layer (peel) is much richer in protein and ash constituents than the body of the potato and hence furnishes in the baked tuber (previously well washed) not only delicious but nourishing food.

Corn on the cob might also be mentioned among the vegetables of high nutritive value; it is no less nourishing than enjoyable for several weeks in the season it may well furnish the chief dish at one meal in the day. Beets, parsnips, artichokes, carrots all possess distinct food values.

Hygenic value. The food value of a few of the more important vegetables has been briefly mentioned. Of still greater value is the part that green fresh vegetbles play in the maintenance of good health. They contain certain salts and mineral compounds as necessary for our well being as the nutrients in our food. In this connection we may quote from an eminent English authority on foods, who says "It is considered essential that a fresh vegetable, such as cabbage, cauliflower, potato, lettuce or other salads (or fruit) should constitute a portion of at least one meal a day. The mineral salts of fresh vegetables render the blood and urine more alkaline and their fibre acts as a stimulus to the movements of the alimentary canal, promote intestinal secretion and counteracts a tendency to constipation."—Frank T. Shutt, Dominion Chemist.

Let Nature Clear Your Blood

With pure, rich blood—a healthy stomach—and an active liver—you may laugh at disease, and, you may have all three by taking

Dr. Wilson's HERBINE BITTERS

This splendid blood medicine—made of old fashioned herbs—gives the system a regular "spring housecleaning"—regulates liver and bowels—cleanses the blood of all poisonous matter—tones up the nerves—and gives strength, vigor and a feeling of good cheer to the whole system.

At most stores. 25c. a bottle; Family size, five times as large, $1.

The Brayley Drug Company, Limited
St. John, N.B. 34

A DRY SHAMPOO

Many people make the mistake, when the hair is excessively oily, of washing it too frequently. Now, shampooing the hair does take off the oil from the scalp, and from the hair, and it also stimulates a new supply of oils—which is as it should be. But weekly washings are apt to take the life out of the hair. Three weeks is best for the soap and water shampoo, in some cases two weeks.

Excessive oiliness denotes an unhealthy condition and should be treated. Meantime, as the hair gets too oily to do up well, a dry shampoo may be used to absorb the oils.

Plain, everyday corn meal, coarsely ground, is wonderful for this. . Spread a sheet of newspaper on the floor, or on a table; take a handful of cornmeal and work it through the hair; take another and another, shaking it through the hair and massaging the scalp; then brush the hair till it is clean and glossy again. You will be surprised at the dirt on the meal when you gather up the paper.

Orris powder is good, too, and rather fragrant. To make this dry shampoo take:

Corn starch, 1 pound; powdered orris, 2 ounces; any perfumed oil, 10 drops.

Keep this in a sifter top can. Sift through the hair, and massage; brush out again. Neither of these powders clogs the scalp much, but they should be brushed off thoroughly, even so. A lot of powder on the scalp keeps it from breathing.

The hair should be shaken, and brushed and shaken again after a powdering (to bring back the natural gloss).

COVERING THE BRIM OF A HAT

When the brim of the hat is of uniform width and not too wide, a bias strip may be used for covering it. If the same material is to be used on the upper and under side, it will not be necessary to have a seam at the edge

The strip must be cut on the true bias and be about two inches wider than twice the width of the brim. Fold the strip through the middle lengthwise and mark the centre with a line of uneven basting. Stretch the material along the folded edge; slip over the brim, keeping the line of basting at the edge and pulling the material snug. Pin in place, putting the pins in at right angles to the edge.

When the strip has been fitted around the brim, mark the place of joining. Remove the pins, take off the material and baste and stretch the seam. Be sure to have the seam with the straight of the goods.

Put in the bias over the brim again and pin in place. Have the line of basting at the edge and the seams at the sides but toward the back. Baste near the edge catching the material on both the upper and under side.

Run a gathering thread near each of the cut edges. Pull the material from the edge of the brim toward the crown and adjust the gathers evenly. First pin and baste the material in position on the upper side, taking the stitches just beyond the bend where the brim joins the side crown. Adjust and baste the under side pulling the material snug.

NONSENSE A GOOD THING AT THE SUPPER TABLE

The fashions in housedresses would seem to have been made for the busy housewife. These straight up-and-down frocks slip on so easily and so quickly and are so shipshape when on that one can dress in a moment. The rather loose frock, made in one piece (waist and skirt fastened together at the girdle line) or joied by snap fasteners if there is any good reason why two parts are more convenient, does away with all bother about hunting and adjusting belt, placket and trimmings—it is all in in one and goes on with about two minutes or less of adjustment.

And it hangs up in your closet on its coat hanger all ready for the instant's rush. Try it and see how much nerve strain it saves you. With a nice big apron you can go into the kitchen and get supper and come out looking as fresh as if you had been sitting in front of the fire doing your war-knitting instead of hustling to get things ready for the family onslaught.

In the question of table conversation a tremendous power lies in the hands of the mother in the directing of family talk. If the mother is indifferent and too tired to join in the conversation the children will monopolize it and descend to trivialities, nonsense or bickering often.

A little jolly nonsense is a mighty good thing at the supper table, and the good jokes you can cull out of the magazines will ward off many a quarrel between Jack and Julia if skilfully applied. But bickering has no rightful place in the family circle. One wise mother I knew used to say, when discussion got too warm, "Can any of you tell me the price of white mice today?" and when inserted into the talk in her sweet, calm voice this question would bring, as she expressed it, "a paragraph on a new subject."

Don't be afraid to ask John's opinion about the women's club politics; he'll soon find them alomst as interesting as his own Civic Club ones if you tell him of the amusing things that happen and so keep young or grow old gracefully together.

My Limbs Would Twitch

AND WAKEN ME—UNABLE TO REST OR SLEEP, I WALKED THE FLOOR IN NERVOUS STATE — WHEN SPECIALISTS FAILED I FOUNN A CURE

This is the kind of a cure that has set Windsor people thinking and talking about Dr. Chase's Nerve Food. The action of this food cure is so radically different to the usual treatment for the nerves that everybody wants to try it. Gradually and certainly it nourishes the starved nerves back to health and vigor and the benefits obtained are both thorough and lasting.

Mrs. M. Smithson, 27 Arthur Street, Windsor. Ont., writes: "I was suffering from nervous breakdown, which was caused by a shock when fire broke out in the adjoining house. My nerves were in such a state that, after going to bed I could not get my nerves quietde down sufficiently to go to sleep. I used to get up and walk around the room, or go downstairs. Even when I would be dropping off to sleep my limbs would twitch and waken me. I used to have cold, nervous night sweats, sometimes would become unconscious and lie that way for quite a little while. I was always cold and it seemed impossibde for me to get warm or keep warm. When on the street I would see two or three objects at once, and did not wont any person to speak to me or bother me. Any little noise irritated and annoyed me very much. I had consulted specialists and tried many remedies during this time, but could not gain relief. At last I tried Dr. Chase's Nerve Food, and bemore long could see that this treatment was proving of benefit. I am now feeling so much better that I can go out on the street without any dijculty, can go across the river and go about the same as usual. I sleep well at night, and am feeling more like myself every day. I am pleased to be able to write you to tell you how much good the Nerve Food has done me. It has strengthened and built up my whole system. I am recommending it to everybody I find suffering from nervous disease of any kind."

Dr. Chase's Nerve Food, 50 cents a box, a full treatment of 6 boxes for not be talked into accepting a substitute. Imitations only disappoint.

RYE MEAL BISCUITS

Stir a cake of compressed yeast into one-fourth a cup of scalded and cooled milk; add one cup of scalded and cooled milk and one and a half cups of sifted bread flour, and mix to a sponge; beat thoroughly and set aside to become light. Add a scant fourth of a cup of melted butter, one-fourth cup of molasses, half a tea spoonful of salt and one and one-fourth cups of sifted rye meal. Mix thoroughly, cutting the dough through and through with a knife. The dough is too soft to knead. When light, with buttered fingers, shape into sixteen balls and set them close together in a baking pan. When again light bake

I bought a horse with a suposedly incurable ringbone for $30.00. Cured him with $1.00 worth of MINARD'S LINIMENT and sold hom for $85 00. Profit on Liniment $54.

MOISE DEROSCE.
Hotel Keeper, St. Phillippe, Que.

about twenty-five minutes; brush over with white of egg or beaten yolk mixed with milk, dredge with granulated sugar and return to the oven to set the glaze. The biscuit may also be glazed with milk without either the white or yolk of egg.

The bran from the rye meal, from which extraneous matter has been removed, may be used. Graham flour may replace the rye meal. Sugar may replace the molasses or all sweetening may be omitted by adding an extra one-fourth of a cup liquid.

EAT AND BE HAPPY

Thomas A. Edison, the greatest inventor in the world, enjoying robust health in his seventieth year, gave this piece of awvice to his fellow citizens:

"Eat the best food, bnt eat less of it. And eat it properly. One-third of tl e average amount of food consumed is a sufficent amount. I eat a quarter of what the averagfe man does. I know because I see it on my own table."

The amount of food eaten is a matter of each individual's requirements. But it is higly probable that the quality of food and the quiet enjoyment of it has something to do with the long and useful life of the wizard of electricity.

There is some thing back of the enjoyment of food. Experts tell us that a laugh at the table adds a day to a life. Dry bread and onion, and a bottle of cogee, are sufficent susteance for the Italian laborers at work on the roadside. They eat in happy companionship, and with the light-heearted jests of their race.

Let us be happy when we eat. There is food for thought in that.

DON'TS FOR THE HOMEMAKER

1. Don't save your best preserves or your sunniest sleeping room for company because who is better company than your own family?

2. Don't ever be so tactful that members of your family will suspect that they are being managed.

3. Don't dictate, even to children, if you can help it. Suggestion is so much better.

4 Don't fail to voice your appreciation whenever any of the family try, even in the smallest way, to lighten your labor.

5. Don't neglect your hair. In other words, adapt your hair-dressing as becomingly to yourself as the styles will permit. No one will appreciate it more than the family. Many a homemaker takes pride in her ufrnishings and even her own dress, but forgets to change her "pug" from the style of ten or fifteen years ago.

6. Don't economize on sleep. If you are up the night before, manage to take a little nap, if ever sa brief, the next day. Plenty of sleep is like oil to an engine.

7. Don't miss reading something uplifting every day. There is always five minutes to spare. If the reading matter is on hand, and, it may be, that five minutes reading will save you an hour of despondency or fatigue.

THE NEW TABLE MANNERS

(From the U. S. Food Administration)

Are you familiar with the latest rulings in war etiquette? And especially the new table manners? Here are a few excerpts from the latest revised 1918 code. It's a war emergency edition, and rebebzer that for every rule "there's a reason."

Economy luncheons are now in vogue. Bread is served on a breadboard and cut as wanted. Everything is passed, and it is correct for each guest to take only what she is sure she wants and to eat all she has contracted for. The cleaner the plate, the better for the manners!

At dinner bread is dispensed with entirely. Likewise butter. It is correct to tip your soup plate to be sure of the last drop. Waste not, want not.

The meat is carved at the table that the guests may be served a second time rather than waste too large a first portion.

When the new war dishes are passed, sample them. Be willing to try everything once. You may like them. But if you are ogered food that you are sure you cannot eat, it is quite au fait to refuse it point blank. Your hostess will understand that it is merely the new war table manners. No watse is the or6der of the day.

It is no longer boorish to wipe up your gravy with a piece of bread and thus conserve butter.

If unable to accept a dinner invitation, you should send your regrets before your hostess has done hed marketing. For these days of close buying or food stugs.

At the reception, lunch or tea it is no longer good form to toy with one's food and then send it back to be thrown out. For this reason it is becoming more and more popular to serve refreshments whenever possible, in buget style. The guest is then put upon his honor not to take more than he wants.

At hotels or restaurants it is perfectly consisten with the order of the day to use your husband's remaining bit of butterthat would make your bread "just come out even."

Don't waste sugar. If two lumps or sugar have been put at the side of your coffee and you do not use sugar in youf coffe at all, better return them to your hostess.

The standard of wealth and social position is no longer gauged by what people can afford to waste. Some years ago a wedding took place at a summer resort on the New England coast, and the elaborateness of that affair is still a fresh memory in those parts. A thrifty New England housewife who was describing the splendor of that repast led up to her climax by saying: "And what do you think? Why, the next morning they carried out two whole barrelfuls of garbage!" But that was "before the war." Today, waste on any such scale would be both unpatriotic and unmannerly.

DATE CUSTARD PIE

1 Cupful Finely Chopped Dates
½ Teaspoonful Salt
2 Cupfuls Milk
4 Tablespoonfuls Butter
4 Tablespoonfuls Flour
3 Tabelspoonfuls Sugar
2 Eggs

Mix the salt with the flour and stir into the butter, which has been melted. Add the milk an stir over a moderately hot fire until it comes to the boiling point. Add the dates and the sugar. Now move the vessel to the back of the stove and let the mixture simmer until the dates have softened. When slightly cooled, add the beaten yolks of the eggs and pour into a lined pie-tin after the pastry has been allowed to harden. Use the whites for the meringue, adding after the custard has set.

PRUNE CUSTARD PIE

1 Cupful Seeded Prunes
3 Tablespoonfuls Sugar
1 Tablespoonful Corn-starch
1 Salt-spoonful Soda
2 Eggs
1 Cupful Sour Milk
Pinch of Salt

Stir the sugar and salt into the beaten yolks. Add the milk to the corn-starch into which the soda has been sifted, taking care that it does not form lumps. Add the two mixtures together and stir in the prunes, which must be chopped finely so that they will mix thoroughly. Pour this over the pastry and bake. Use the whites for meringue, flavoring with lemon-juice.

Carry Lemons on Your Automobiling Trips and jaunts into the country, if you are suspicious of the purity of the drinking water. The juice of a lemon squeezed into a glass of water will purify and make it safe for drinking.

Economy Jar Caps may be taken from the jars by placing a hot iron on them and turning until all the adhesive material is softened, instead of puncturing the cap as directed. Caps may then be used again on jars used for jam or pickles not needing to be sealed.

In Making Gems, you can save waste and labor by melting the shortening in one of the pans in which you are intending to bake the gems; then, with a bit of soft paper, swab the other pans from the first.

Paper Flour Sacks make excellent ice blankets for covering the ice in the refrigerator. By doing this the ice bill will be greatly lessened. Newspapers may also be used with good results.

To Boil and Bake With the Same Heat from your oil stove, bake in the rack of your oven and boil in lower part, near the fire. This not only economizes on fuel, but improves the baking quality; it also boils faster and better than in an open kettle.

Old Suspenders, Washed and Ironed, make splendid inside belts for skirts. Since they are narrow, lap two edges together and stitch them on the machine. They do not get flimsy after washing, as regular belting does.

Your Lettuce Will Not Wilt and therefore have to be discarded if you will wash it thoroughly and keep it in an earthen jar tightly covered.

When Children's Ribbed Stockings are hopelessly worn out, unravel the remaining parts of the legs, wind the cotton or wool on a spool and use for darning other stockings.

In the Fields
Wear the Sturdy
FLEET FOOT SHOES
and enjoy the easy comfort which these economical shoes give.
FLEET FOOT
is for work as well as for play. Staunch, sturdy styles like the "WORKMAN" and "EVERY-DAY" stand right up to any farm work—yet are light and easy, and enable you to tramp the fields all day without the feet getting over-tired.
The leading Shoe Stores have FLEET FOOT styles, shapes and sizes for every member of your family—for work or play.
None genuine without the name FLEET FOOT stamped on the sole. Look for the name.
2
The best Shoe Stores sell FLEET FOOT
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DOMINION
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When the War Ends

there will be many opportunities during the reconstruction period.

But they will need a little ready money to "swing them."

The question is—are you willing to save money *now* to grasp the opportunity *then?*

Decide, now, to let us help you to save. Interest paid every six months.

Paid-up Capital - $ 6,500,000
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3A

DON'T WORRY

Worry is the most popular form of suicide. Worry impairs appetite, disturbs sleep, makes respiration irregular, spoils digestion, irritates dispositions, warps character, weakens mind, stimulates disease and saps bodily health. It is the real cause of death in many instances where some other disease is named in the death certificate. Worry is mental poison; work is mental food.

When a child's absorption in his studies keeps him from sleeping, or when he tosses and turns from side to side, muttering the multiplying table or spelling words aloud, when sleep does come, then that child shows he is worrying. It is one of nature's danger signals raised to warn parents and in mercy the parents should take a firm stand. The burden of its daily task should be lightened, the tension of its concentration should be lessened, the hours of its slavery to education should be cut short.

When a man or woman works over in dreams the problems of the day, when the sleeping hours are spent in turning the kaleidoscope of the day's activities, then there is either overwork or worry, and most likely it is the worry that comes from overwork. The Creator never intended a healthy mind to dream of the day's duties. Either dreamless sleep or dream of the past should be the order of the night.

When the spectre of one grief, one fear, one sorrow, obtrudes itself between the eye and the printed page; when the inner voice of this irritation memory, or fear, looms up so loud as to deaden outside voices, there is danger to the individual. When all day, every hour, every moment, there is the dull, insistent, numb pain of something that makes itself felt through, above and below all our other thinking, we must know that we are worrying. Then there is but one thing to do—we must stop that worry; we must kill it.

Worry is forethought gone to seed. Worry is discounting future sorrows so that the individual may have present misery. Worry is the father of insomnia. Worry is the traitor in our camp that dampens our powder, weakens our aim. Under the guise of helping us to bear the present, and to be ready for the future, worry multiplies enemies within our own mind to sap our strength.

Worry is the domination of the mind by a single vague, restless, unsatisfied, fearing and fearful idea. The mental energy and force that should be concentrated on the successive duties of the day is constantly and surreptitiously abstracted and absorbed by this one fixed idea. The full, rich, strength of the unconscious working of the mind, that which produces our best success, that represents our finest activities, is tapped, led away, and wasted on worry.

Worry must not be confused with anxiety, though both words agree in meaning, originally, a "choking," or a "strangling," referring, of course, to the throttling effect upon individual activity. Anxiety faces large issues of life seriously, calmly, with dignity. Anxiety always suggests hopeful possibility; it is active in being ready, and devising measures to meet the outcome. Worry is not one large individual sorrow; it is a colony of petty, vague, insignificant, restless imps of fear, that become important only from their combination, their constancy, their iteration.

When the death comes, when the one we love has passed from us, and the silence and the loneliness and the emptiness of all things makes us stare dry-eyed into the future, we give ourselves up, for a time, to the agony of isolation. This is not a petty worry we must kill it, as it kills us. This is the awful majesty of sorrow that mercifully benumbs us, though it may later become, in the mysterious working of omnipotence, a rebaptism and a regeneration. It is the worry habit, the magnifying of petty sorrows to eclipse the sun of happiness, against which I here make protest.

To cure worry, the individual must be his own physician; he must give the case heroic treatment. He must realize, with every fibre of his being, the utter, absolute uselessness of worry. He must not think this is common-place—a bit of more theory, it is a reality that he must translate for himself from mere words to a real, living fact. eH must understand that if he spent a whole series of eternities in worry, it would not change the fact one jot or tittle. It is a time for action, not worry, because worry paralyzes thought and action too. If you set down a column of figures in addition, no amount of worry can change the sum total of those figures. That result is wrapped up in the inevitability of mathematics. The result can be made different only by changing the figures as they are set down in that column.

The one time that the man cannot afford to worry is when he does worry. Then he is facing, or imagines he is, a critical turn in affairs. This is the time when he needs one hundred per cent of his mental energy to make his plans quickly, to see what is his wisest decision, to keep a clear eye on the sky and on his course, and a firm hand on the helm until he has weathered the storm.

There are two reasons why man should not worry, either one of which must operate in every instance. First, because he cannot prevent the results he fears. Second, because he can prevent them. If he is powerless to avert the blow, he needs perfect mental concentration to meet it bravely, to lighten its force, to get what salvage he can from the wreck, to sustain its strength at this time when he must

A SERVICE FLAG WITH MANY STARS

Pathe Freres, the World-Renowned Makers of Phonographs and Moving Picture Films, Have 2,080 Stars in their Service Flag.

Mr. Ferdinand Zecca, the new Director General of Productions, who arrived recently from Paris, states that more than 2,000 French, English and Italian employees of Pathe Freres have served in the ranks of the Allies as officers, non-commissioned officers and privates, and that more than 200 died on the battlefields.

More than 500 have been decorated for bravery.

A large number have been wounded and released from service, and have returned to the positions they held with Pathe Freres before enlisting.

More than 80 men have responded to the call to the colors on this continent, and the list is rapidly growing.

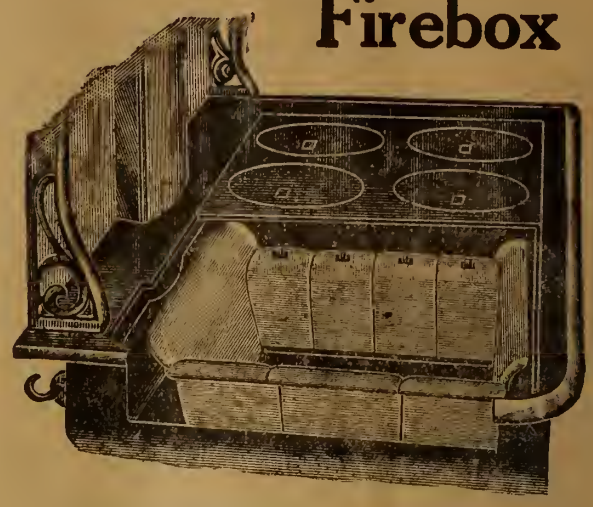
FIRST AID IN THE KITCHEN

Mends Leaks in Graniteware, Tin, Aluminum, etc., in two minutes without tools. Saves a kettle for half a cent. At dealers or from us, 15 cents.

Vol-Peek Co., Box 2024, Montreal, Can.

VOL-PEEK

The Stretchable Firebox



Durability in a firebox depends mostly upon its ability to expand when hot and to contract when cold, without cracking.

Ever notice that steel rails are laid with a space at the ends—it is wider in winter than in summer. That space allows for stretching in the warm summer weather.

Kootenay fireboxes are made of nine pieces of pure semi-steel. They can expand without cracking. That is why Kootenay fireboxes last so long. If you do have to change a piece it comes out with a tap of a hammer—no bolts, no rivets or other fastenings—just good accurate fitting.

"Service in the Kitchen."—Booklet Free

This is only one of the many features of the Kootenay Range described in a beautiful little booklet, "Service in the Kitchen," which will be mailed free on request. It tells all a woman wants to know about a range before she buys it.

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Spanking Doesn't Cure!

Don't think children can be cured of bed-wetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Address

Mrs. M. Summers
BOX 309 WINDSOR, Ontario

plan a new future. If he can prevent the evil he fears, then he has no need to worry, for he would by so doing be dissipating energy in his hour of need.

If man does day by day, ever the best he can by the light he has, he has no need to fear, no need to regret, no need to worry. No agony of worry would do aught to keep him. Neither mortal nor angel can do more than his best. If we look back upon our past life we will see now, in the marvelous working of events, the cities of our greatest happiness and of our fullest success have been built along the rivers of our deepest sorrows, our most abject failures. We then realize that our greatest happiness or success would have been impossible had it not been for some terrible affliction or loss in the past—some wondrous potent force in the evolution of our character or our fortune. This should be a wondrous stimulus to us in bearing the trials and sorrows of life.

To cure oneself of worry is not an easy task; it is not to be removed in two or three applications of the quack medicine of any cheap philosophy, but it requires only clear, simple, common sense applied to the business of life. Man has no right to waste his own energies, to weaken his own powers and influence, for he has inalienable duties to himself, to his family, to society, and to the world.

The Matter of Worrying.

There is just one thing more enervating than worrying too much, and that is not worrying enough. The philosophy in the advice DON'T WORRY is not the philosophy of practical people, but of newspaper physicians, beauty doctors, useless centenarians, and cheerful cherubs generally. One opens up the calendar for the new year and the motto on January 1st whn bills fall due, is DON'T WORRY. One break a leg on the icy sidewalk and lies abed when business is urgent, and the nurse, discovering a degree or two of perfectly justifiable fever, says sweetly, now DON'T WORRY. Was ever advice so untimely?

If love makes the world go 'round, it is worry that makes it forge ahead. To the Anglo-Saxon makers of our tongue, to worry meant to strangle, to take the wolf at the door by the throat and choke him, not simply look timidly at him through the keyhole and deplore his presence. If a mother does not actively worry when her children fall ill, the chances are that she will allow the unsanitary conditions which brought them to this pass to continue. If a father does not actively worry over his growing boy he is likely to have a far severer kind of worry to indulge in when the boy reaches manhood. It is a housewife's worrying over the pennies that leaves the pounds free to take care of themselves.

True serenity is not the negative result of not worrying, it is the positive result of fighting, and comes after, not before the battle, "Job's comforters," for all our meering, were his good friends. They found him disconsolate upon an ash-heap, his mind an amorphous fog of self-pity. Had they told him not to worry he would, doubtless, have sat there, passively non-worrying to the end. As it was, before they got through with him he was justifying himself to his Creator in good, clear energetic terms that promised well for the future.

When the schoolboy says "I should worry", he comes nearer to the truth than he knows; and it is only because he has already worried—worried his way through problems to their solution, and strangled the wolfish questions on examination papers into silence, with a decent display of knowledge—that he can voice his present unconcern so cheerfully. Were the business men to stop to the same slang phrase—perhaps he does—he would yet know in his soul that he can only get to the top by worrying his way there.

The man who doesn't worry is the type of man who doesn't pay his rent. The woman who never worries sits passively rocking while her children run at large. But your true and capable workers asks for no comforting palaver. No rocking-chair for him. From much strangling of wolves he has become an expert wrestler. He is no tat a loss in a catastrophe. For he is like one who has stooped in order that he may leap. His muscles are taut, his vision clear, and for him, "if the sky falls, there will be dathcing of larks." For non-worrying Micawbers nothing turns up, but this man will worry his bright, undaunted way to the unattainable.

THE YOUNG FOLKS

The children go loving this good old world,
Just loving it simple and true,
Filling it full of their own sweet dreams,
And loving it—that's what they do.
To them its a place to be happy in,
And they view it with shining eyes.
O grown folks, weary and wistful and worn,
Are not the children wise?

We grope for the mean and the selfish things,
They hold to the dream and the play;
We toil for the money that leaves us poor,
They're rich in the sunlit day.
We hate and suffer, they love and enjoy,
All under the self-same skies—
O grown folk living a life so bare,
Are not the children wise?

HOUSEHOLD HINTS

To take up a carpet properly, first sweep and wipe it, then remove all tacks, and carefully fold one-half the carpet back upon the other. Sweep the exposed under side with a stiff broom well dampened, fold again in half and sweep the under side. Repeat until the whole carpet is in a handy pile, which can be lifted and taken away. Rugs or carpets should not be dragged in moving them.

In cleaning bureau drawers it is a good plan to wipe them out with a damp cloth and then follow with a linen cloth wet in alcohol. This will dry immediately, so that the contents may be put back at once. Wood alcohol should of course not be used to any considerable extent. It is a dangerous substance, the fumes of which are injurious to the eyes, and often cause blindness if one is much exposed to them.

This is a good way to make use of dried apples: Cream half a cupful of butter or butter substitute with half a cupful of brown sugar; add two well-beaten eggs, three cupfuls of flour sifted with half a teaspoonful of salt, and three teaspoonfuls of baking powder; then add one cupful of stewed and sifted dried apples. Roll out on a floured baking board, cut into rounds with a biscuit cutter, and bake in a moderate oven for twenty minutes. Serve hot.

STRETCHING CURTAINS

Drying lace curtains without a stretcher may be done by laying a clean sheet on the floor or a room that is not in use, and, after the curtains are washed, stretching them on the sheet, sticking a pin through each point of lace and pinning through the sheet to the carpet; or if you have a level, sunny lawn, they may be stretched out on the grass, each point being fastened down with a wooden toothpick. When the curtains are dry it is better to pull every point or scallop off the toothpicks, leaving the latter in the ground, as in pulling the toothpicks out first the end that has been in the ground may soil the curtains.

GRAVY ON A TABLECLOTH

When gravy has been spilt by some hapless diner on your pet tablecloth rub the grease spot thoroughly with French chalk on both sides of the cloth. Fold the cloth and leave it until the next time it is needed. Lightly brush off the chalk with a soft clean brush, and your cloth will be as spotless as when freshly laundered.

The ENTERPRISE
BLAZER
WARM AIR FURNACE
Will Keep Your Home Full of Pure, Fresh, Warm Air at Least Expense and Trouble
WRITE FOR BOOKLET
THE ENTERPRISE FOUNDRY CO. SACKVILLE, N. B.

FOR SCHOOL BOOKS

Provide a place for the school books and avoid having them all over the house and hard to find when the children are in a hurry to go to school. In one household shelves were put up in a back hall, each child having his own shelf. On this shelf were also placed any other articles belonging to that particular child which were picked up downstairs. A curtain was hung in front of the shelves.

IRONS WON'T STICK

Add a little lard and salt to the starch. This will give the clothes a glossy surface and it will keep the irons from sticking. Nice finish for table linen.

TO REMOVE WHITE SPOTS

The white spots which hot dishes often leave on tables and other wooden surfaces can be removed by applying a mixture composed of equal parts of alcohol, olive oil and pure cider vinegar. Shake well before using. Rub well with a woolen cloth and polish with another soft woolen cloth.

A SHOE HINT

If a boot or shoe pinches in any particular place, a cloth wrung out of very hot water and laid over the spot while the shoe is on the foot will expand the leather and remove the pinch.

FOR PRICKED FINGERS

To prevent pricked fingers when sewing, especially when quilting, protect the tpi of the fingers most used with strips of surgeon's adhesive plaster. This allows as much freedom as if the fingers were bare and one cannot prick through the plaster.

SAVE SUGAR By Using
CROWN BRAND
CORN PURE SYRUP
for all Sweetening

In 2, 5, 10 and 20 pound tins and 3 lb. "Perfect Seal" Glass Jars.

for making homemade candy—for all baking—as a sauce for desserts—on griddle cakes and hot biscuits—use this delicious table syrup, made from corn—and thus save sugar. Ask your grocer.

THE CANADA STARCH CO., LIMITED.
MONTREAL, CARDINAL, FORT WILLIAM.

131

Sheep on Every Hill Side in New Brunswick

The New Brunswick Government through the Department of Agriculture has arranged with the Chartered Banks to help the Farmers—where assistance is needed—to buy Sheep.

The Department will not only arrange to buy Sheep **FOR** the Farmers, but will also buy good breeders **FROM** the Farmers—in other words, this branch of the Agricultural Department **WILL SUPERVISE ALL PURCHASES AND SALES OF SHEEP.**

IF A FARMER NEEDS CREDIT TO BUY SHEEP he should consult his local banker who has the necessary forms.

If you cannot buy sheep in your locality, inform the nearest banker who will notify the Agricultural Department, or, better still, notify the Department yourself and say how many Sheep you want.

KEEP YOUR EWE LAMBS

Every Ewe Lamb, weighing 80 pounds and over and of reasonable quality, should be retained by farmers for breeding purposes. Sell the males and the inferior females for butcher purposes. If you have more ewe lambs than required, induce your neighbor to purchase.

THE VALUE OF WOOL

Unwashed Wool of the best quality brought 80 cents a pound this spring, or about $5.00 a fleece.

SIXTY MILLION SHEEP

Have been lost in Europe since the war started. Wool in enormous quantities is now required to clothe the soldiers, it will take an immense quantity to reclothe the returned men in civilian dress. Prices will likely be high for ten years.

New Brunswick has the pasture, hay, roots and a climate suited to Sheep. Every farmer should consider investing in a small flock as a foundation. The first year will give approximately $4.00 worth of wool per sheep, the sheep will cost about $15.00 Is it not a good business proposition?

If you cannot purchase locally, place your order with your banker. Orders will be filled, if possible, in the order filed at this office through the banks.

For further information apply to

J. F. TWEEDDALE, Minister of Agriculture.

MARKETS.

ST. JOHN MARKETS

Groceries

Sugar—			
Standard	$9.15	@	$9.20
Yellow	8.65	"	8.70
Rice	10.25	"	10.35
Tapioca	0.17	"	0.18
Beans—			
Yellow-eyed	10.00	"	10.25
White	9.50	"	9.75
Cream of Tartar	0.78	"	0.81
Molasses	0.89	"	0.90
Peas, split, bags	10.50	"	11.00
Barley, pot, bags	6.50	"	6.75
Cornmeal, gran	0.00	"	14.50
Raisins—			
Choice, seeded	0.12½	@	0.12¾
Fancy, seeded	0.12¾	"	0.13
Salt, Liverpool, per sack, ex store	2.10	"	2.15
Soda, bicarb	4.60	"	4.65

Meats, Etc.

Beef—			
Western	0.00	"	0.24
Country	0.16	"	0.19
Butchers	0.20	"	0.23
Eggs, case	0.35	"	0.36
Eggs, fresh	0.38	"	0.40
Spring Lamb	10.00	"	12.00
Pork	0.24	"	0.25
Veal	0.15	"	0.18
Mutton	0.25	"	0.28
Butter—			
Tub	0.35	"	0.40
Roll	0.42	"	0.44
Chicken	0.00	"	0.45
Fowl	2.25	"	2.50
Potatoes, barrel	2.00	"	2.25

Flour

Gov. standard	0.0	"	12.05
Ontario	0.00	"	12.05
Oatmeal, standard (No quotation)	0.00	"	0.00
Oatmeal, rolled	0.00	"	12.00

Provisions

Pork, Am. clear	61.00	"	64.00
Beef, Am. plate	41.00	"	42.00
Lard, pure	0.32	"	0.32½
Lard, comp., tubs	0.27½	"	0.27¾

Oats, Feed, Etc

Oats, per bushel	1.05	"	1.10
Oats, car lots, bush.	1.00	"	1.05
Bran, car lots, bags	48.00	"	49.00
Hay car lots ton	18.50	"	19.00
Hay small lots ton	0.00	"	20.00
Middlings small lots	49.50	"	50.00

CHARLOTTETOWN

Beef, retail 8c to 26c. Carcass 13c to 18c.
Veal, carcass 12c to 20c.
Hogs, none.
Lamb, carcass 22c to 30c.
Mutton, carcass, 16c to 18c.
Beef Hides 12c.
Sheep Skins, $3.50 to $5.50.
Calf Skins, 16c to 20c..
Potatoes, 50c bushel.
Carrots, none.
Turnips, none.
Parsnips, none.
Oats, 90c to $1.00 bushel.
Cornmeal, $4.25 to $4.50 bag.
Bran, $2.15 to $2.25.
Oatmeal, $6.00 to $6.50.
Middlings, $2.45 to $2.60.
Oil Cake, $3.85 to $4.25 bag.
Buckwheat, none.
Ontario Flour, $12.50 to $13.00.
Manitoba Flour, $12.50 to $13.00.
Chickens, none.
Fowl, none.
Turkeys, none.
Geese, none.
Butter, Creamery, 42c to 44c.
Butter, dairy, 38c to 40c.
Cheese, old, 23c to 24c.
Eggs, 36c to 37c.
Hogs, 85c per 100 lbs.
Straw, 55c to 65c per 100 lbs.

MONTREAL QUOTATIONS

Oats—Canadian Western, No. 3, 96; extra No. 1 feed, 93.

Flour—New standard, $10.95 to $11.05.

Bran, $35; shorts, $40; moullie, $70.

Hay—No. 2, per ton, car lots, $14.50 to $15.

Potatoes—Per bag, car lots, $1.55 to $1.60.

MONTREAL PROVISIONS

Montreal.—There was no further change in the condition of the local egg market today, but the feeling is still strong on account of the high prices prevailing at all country points and the comparatively small offerings, consequently the prospect is that prices will rule still higher in the near future.

A very firm feeling prevailed for potatoes today at the recent advance noted in prices owing to the fact that the offerings on spot continue light.

There were no important developments in the butter market today, prices for all grades being maintained with a steady trade passing which is principally for storing account for future requirements.

The trade in small cheese for domestic account was rather quiet, but prices were unchanged, with sales of 60-pound cheese and twins at 22½ to 23c per pound.

Quotations:—Cheese—Finest easterns, 22½ to 23c. Butter—Choicest creamery, 46c. Eggs—Selected, 48c; No. 1 stock, 45c; No. 2, 40c. Potatoes—Per bag, car lots, $2.25. Dressed hogs—Abattoir-killed, $28.50 to $29. Lard—Pure wool pails, 20 lbs, net, 32c to 33c.

MONTREAL MARKET FOR CATTLE ACTIVE

The receipts at the Canadian Pacific stock yards this morning for today's market amounted to 200 cattle, 200 sheep and lambs, 450 hogs and 1,000 calves. The market was active and a good demand for all lines quite cleaned up supplies. Prices were easier, and have declined about 50c per 1008 pounds at this market during the week. Choice steers were rather scarce, and most of those offered were poor quality, which made prices lower. The best sold at from $11.00 to $12.50 per 100 pounds, while inferior were as low as $10.00. Some good butcher bulls fetched $10.00 per 100 pounds, but the majority sold at from $7.00 to $9.00. Butchers' cows were in demand at from $7.50 to $10.00 per 100 pounds. The market for sheep was inactive compared with other sections of the market, and prices were from $9.00 to $12.00 per 100 pounds. Some lambs were offered, but the prices ruling for this section were exceedingly high, from $18.00 to $19.00 per 100 pounds for some choice stock, while others sold down to $11.00. Calves, of which a considerable quantity were offered, sold at from $9.00 to $15.00 per 100 pounds for good milk-fed stock. Choice select hogs sold from $19.00 to $19.25 off cars, while sows were from $2.00 to $3.00 per 100 pounds less.

CASH OATS STRONGER, ON MONTREAL MARKET

A stronger feeling prevailed in the local market for cash oats to-day, and at the close prices were marked up ½c per bushel, but the demand for supplies from all sources continues slow, and business was dull, with car lots of No. 2 Canadian western quoted at 96½c, tough No. 2 Canadian western, No. 3 Canadian western and extra No. 1 feed at 93½c, No. 1 feed at 90½c, and No. 2 feed at 87½c per bushel, ex-store.

There was no further development in the local flour situation to-day, prices for rye and barley flour being steady at the recent decline noted, with a moderate amount of business passing.

A fairly good trade continues to be

done in most lines of millfeed, there being a steady demand for supplies for domestic and country account, and the undertone to the market is steady.

The condition of the market for baled hay was unchanged, business in all directions being still dull.

Quotations:—Oats, Canadian western, No. 2, 96½c; extra No. 1 feed, 93½c. Flour, new standard grade, $10.95 to $11.05. Rolled oats, bags, 90 lbs., $5.10 to $5.15. Bran, $35. Shorts, $40. Mouillie, $67. Hay, No. 2, per ton, car lots, $14.50 to $15.

THE ADVANTAGE OF TILE DRAINAGE.

At the Experimental Station, Ste. Anne de la Pocatiere, Que., an experiment on drainage has been conducted, the results of which should be of great interest to farmers, as they teach an eloquent lesson in favor of good soil drainage, a practice which should be encouraged as much as possible in these days when maximum production is the duty of every farmer.

A certain area of level land was taken for the experiment and divided into two fields, A and B, absolutely similar in every way. Field A was underdrained by means of three-inch tile placed at a depth of four feet and thirty feet apart. Field B. was not tile drained but had perfect surface drainage. These two fields were cultivated and treated exactly alike; rotation, cultural methods, manure, choice and quality of seed, etc., being the same in each case.

Close observation has shown that larger yields were obtained on the tile drained area each year than on that which was only surface drained. The difference was rather small the year following the laying of the tile, was larger the following year and became quite marked the third year. It was most marked among crops like corn which require more warmth. In 1917 the crop of corn on the tile drained area was more than twice as great as that on the undrained field, the exact difference being 108 per cent., wheat yielding 72 per cent. more and hay 20 per cent. It might, however, be noted that the fact that the season of 1917 was exceptionally late and damp gave a special advantage to the drained area and the results might not be so marked in a normal year.

The difference in crop yields, however, is not the only point in favour of the drainage, there are other good effects also. After three years the experiment has proved that the soil on the tile drained area has become much more porous and more mellow, than the soil which was only surface drained. It can be cultivated more easily and can be worked and sown earlier in the spring. It will be readily seen that this is of great importance in sections wheer the springs are often late and the growing season relatively short. Beside this, while the soil on the undrained area dried and cracked, allowing the crops to make hardly any growth during the dry weather in July, the drained land did not show the least cracking, and the plants continued their development uninterruptedly. This difference is easily explained; the drained soil was left permeable to air and moisture, the air circulated freely and the moisture rose by capillary action without difficulty through the subsoil to the roots, while the undrained soil hardened and split, and the roots wihered for lack of air and moisture.

CARE OF MACHINERY

Even casual observers cannot fail to notice that the average Canadian farmer is very careless about housing and repairing his machinery. Students of this matter, both in the United States and Canada, estimate that by good care the average life of farm machinery could be at least doubled. On a great many farms at this time of year one may see much valuable machinery standing half covered with snow in the place where last used. The loss by this neglect is doubled, for besides the deterioration suffered by the machine there is the time taken in the spring, when time is most precious, putting the rusty machine into running order. This may result in a loss to the farm several times the value o fthe machine.

During the winter the average farmer has some leisure time and this could be most profitably employed in overhauling and repairing his machinery. Machinery should, of course, be housed and it may not be too late even now to rescue the machines from the snow drifts. Taking the machines apart effects a saving in storing space. All metal parts not painted, as on ploughs and harrows, etc., and the wearing parts of other machines should be smeared witha heavy mineral oil. All other parts should be painted after all the necessary repairs have been made and all bolts and screws tightened and replaced where necessary. Binder canvasses should be removed and hung up. The machines should be gone over one by one and left in good working condition. Worn out and broken parts may be secured more easily now than in the spring rush.

Every farm should have a machine shed with a small work shop in one end. Here the work may be carried on in inclement weather with comfort and efficiency. Such a shop will pay for itself in a few years.

Let us all do our bit and besides talking patriotism take advantage of every means possible of conserving our machinery and producing a bumper crop in 1918. J. A. S.

SOUR STOMACH

Specks Before the Eyes.

Sour stomach and biliousness are caused by a sluggish liver, for when the liver is not working properly, it holds back the bile, which is so essential to promote the movement of the bowels, and the bile gets into the blood instead of passing through the usual channel, thus causing many stomach and bowel troubles.

Floating specks before the eyes is also another indication that the liver is sluggish and requires stirring into action. This you can best do by taking Milburn's Laxa-Liver Pills. They stir up the sluggish liver, clean the coated tongue, sweeten the breath, and do away with all stomach ills.

Mr. John R. Morrison, Grand River Falls, N.S., writes: "Several months ago I was troubled with a sour stomach and had specks floating before the eyes. I took five vials of Milburn's Laxa-Liver Pills which cured, and cleared my blood before any length of time. I told my friends about it, and they got some, and they, too, find themselves different since they took them. I recommend your pills very highly."

Milburn's Laxa-Liver Pills are 25c. a vial at all dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

SUPPLEMENTING THE INCOME

..Every farm woman tries to make the butter and egg money cover as much of her household expenses as she can. What other means for making money have you found? In this contribution, it is my hape, that I may be able to assist some one of the many farm women who are putting forth such brave efforts t oassist their husbands, and also their needy fellow beings by adding to their probably slender incime. Our farm being situated about three miles from the country village and as we have young people of our own, it has been one of our pleasures to invite some of the young people of the village, young men or women who are far from home and home pleasures, to partake of our hospitality. In so doing it has happened a few times that having enough room and to spare, we have taken a boarder. Of course in these days of runabouts and cars a young man is better able to take advantage of such a chance than one without. Such was the case here. Accordingly I had a gentleman boarder all summer and fall and it certainly was not a great deal of trouble either. I made him feel at home and that he was considered as one of the family. He took his meals with the family, sat in the kitchen or sitting room, just as he chose, often helped wash dishes, brought or carried erands from or to the village and we got along just fine. The money was very acceptable in times like 1916 when we were hailed out and we felt the extra work scarcely at all. A boarder is frequently looked upon as more bother than any gain attached, but I think it depends upon the way in which you take care of them. I did not set an extra table or fuss around, making myself more trouble and in turn making my boarder feel that he was putting me to a lot of trouble. Of course a great deal depends on your choice of boarder. I have had three boarders at different times and all very congenial and pleasant to have in your home. I always feel sorry for those who have to board in a boarding house, with no home accommodation or pleasures at all but simply from their business to their meal, from there to their room or the street or such other amusement as pool rooms and picture shows.

By this means I have added not only to our income but also to our own and our fellow beings' pleasrue.—M.M.

CREONOID

To get more milk from your cows

The cow that is free from flies always gives the biggest milk yield. To keep the cow free from these pests use Creonoid. Spray it in the stall and on the body of the animal.

Creonoid is a low-priced, powerful, non-poisonous creosote product.

Flies, lice, etc., cannot live near it.

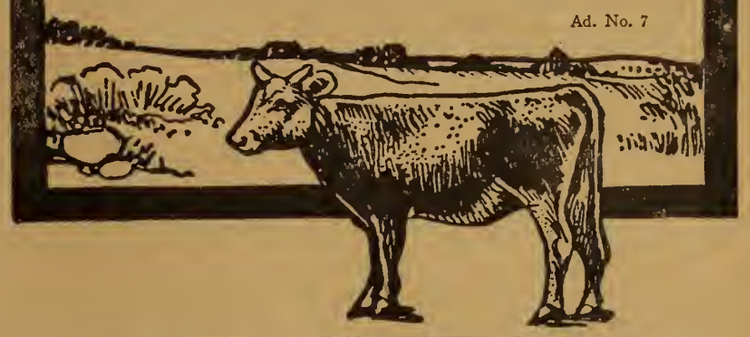
If you have any difficulty obtaining Creonoid write to

THE BARRETT CO. LIMITED

(formerly the Carritte-Paterson Mfg. Co. Limited)

ST. JOHN, N.B. HALIFAX, N.S. SYDNEY, N.S.

Ad. No. 7



NEW BRUNSWICK'S RESOURCES

In this material age, the cry is for "opportunity"—opportunity to develop and utilize every avaiable asset. While much interesting an dinstructive material has been published regarding the province of New Brunswick, from time to time, by both the federal and provincial governments it had chiefly to do with her possibilities from the standpoint of the agriculturist. Her vast wealth of forest and mine; her water powers and waterways; her store of fish and game were not made the subject matter of many concrete publications. It is only of comparatively recent years that the attention of the world has been effectively called to enormous protentialities of this little province by the sea.

There has been issued recently a small pamphlet of 27 pages entitled "The Province of New Brunswick, its Natural Resources, Developed and Undeveloped."

While the wealth of the forest, mine and fisheries has been dealt with in this little work it must not be supposed that the agricultural advantages of the province have been ignored. By no means. They have been given a prominent place, as they well deserve. Following them, the subjects of forestry, minerals, fisheries, water powers, water ways, angling and fur farming have been treated in a concise but intelligent manner. What adds materially to the value of the publication, is the series of maps outlining the agricultural, forestry, mineral and water power situations.

IMPORTANT POINTS IN HATCHING

During the hatching season the poultry house, and particularly the nest, should be kept clean. Clean water and a supply of whole grain should be accessible to the sitters, and a dust bath should be provided also. If more than one hatch is being taken off clean out and disinfect the nest after each hatch and put in new sod and fresh litter. Dust the hen with insect powder before putting her in the nest and again a day or two before leaving the nest with the chickens. It is a good plan to put into the dust bath a little dry sulphur or ground tobacco.

Be sure also that the house is free from mites. These little pests get into the cracks and corners of the building, and at night, as the hens are resting, they come out of their hiding place, get on the hen's body, and it does not take very many of them to make a hen so uneasy that she cannot sit. In some cases the mites become so troublesome that they actually worry the hens to death.—E. F. N.

Inspect These Bonds Before You Buy

If you think you would like to buy one or more Victory Bonds, cut out and mail us this advertisement, after first checking off amount of bond, or bonds, you would like to invest in. We will send the bonds to you at your local bank, where you may inspect them before making payment. Then, if you decide to invest you may pay for them through your local bank without extra charge or exchange on cheque.

There's no reason why anybody should keep money for which they have no immediate use drawing no interest, or drawing only 3% interest, when he or she can invest it in Victory Bonds and obtain 5½% to 5¾% interest.

And, remember, Victory Bonds are readily saleable and Free of Federal Income Tax.

You can buy Victory Bonds at the following prices;

$1,000	costs.....	$995.00
500	costs.....	497.50
100	costs.....	99.50
50	costs.....	49.75

and accrued interest.

Larger amounts $995 per $1000. Interest which is payable every six months at all banks Commences from date of your investment so write us to-day—or we will hold bonds for you to be delivered the first of the month.

Graham, Sanson & Co.
INVESTMENT BANKERS

Toronto General Trusts Building, Toronto.

NEW BRUNSWICK COMING TO THE FRONT IN SHEEP RAISING

(Continued from page 617)

gets his money at once for any loss. If the owner of the dog doing the damage is known and he fails to kill the dog he becomes liable for that damage.

"It is encouraging to find such a law as this. It is more encouraging to hear that it is being enforced.

"A lot of sentiment has been wasted by the ones who oppose cruelty to animals. The secretary of a sheep associatio had an illuminating experience. He was waited on by a committee whose members took him to task for advocating the killing of untaxed dogs.

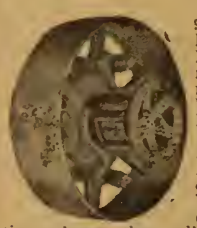
"My understanding is that you oppost cruelty to animals," he said.

"Yes."

"Well you are right about it," he said. "It is a worthy cause and I would like to join. There is one cruelty that I have long wanted to see stopped." And he got from his files of pictures, gathered from various parts of the country, photographs showing hundreds of sheep killed by dogs.

"The secretary began quoting figures as he rummaged for pictures showing the effects of rabies on human animals, but his visitors had lost interest. Rather shamefacedly they made excuses and hurried away. Thus sentiment routed sentiment.

Who chose the Friction Pulley on your Engine?



9 of the Friction Pulleys sold with Gas Engines are not manufactured by the makers of the engine. When you buy an Engine equipped with Friction Pulley you have your choice of Engine, but someone else choice of Pulley. When buying make certain of satisfaction—choose the pulley yourself—specify, or order direct. Bernard's Double Friction Pulley.

THE A. BERNARD INDUSTRIAL COMPANY

Manufacturers, Etc.,

Office and Works, Fortierville, Que.

HOW TO PREVENT MOTOR ACCIDENTS

These suggestions, taken from a handbook issued jointly by a number of concerns writing automobile insurance, are based on experience gained in handling thousands of automobile accident and damage claims.

Don't drive fast with a tire that is soft or nearly worn out.

Don't permit your spot light to blind the drivers of approaching cars.

Put whatever alcohol you use in the radiator.

See that your brakes are properly set and turn your front wheels toward the curb if you leave your car on the incline.

Watch for the pedestrian who tries to cross the street ahead of you after you have received the traffic officer's signal to go ahead.

When being towed or towing another car, don't hurry; take corners slowly and look out for the pedestrians who may try to cut between the cars, not observing the tow rope.

Stop as far as possible from the travelled portion when necessary to make repairs or tire changes on the road.

If working on the road side of a car exercise extreme care.

If forced to stop at night, never permit anything or any one to stand so as to hide the tail light from the view of approaching drivers.

If you are driving, don't try to talk to persons in the tonneau.

When using an elevator, don't drive on or off before the elevator comes to a full stop at proper level.

Don't run the motor in a closed garage. The carbon monoxide in exhaust gases is odorless and colorless, yet a small percentage of it in the air is fatal.

Don't park your car, leaving headlights undimmed. But be sure to see that all lights are burning at night.

Don't allow children to drive.

Women should not be permitted to drive alone until they have become experienced operators.

Install a good non-glare device in lights, and keep your lights adjusted.

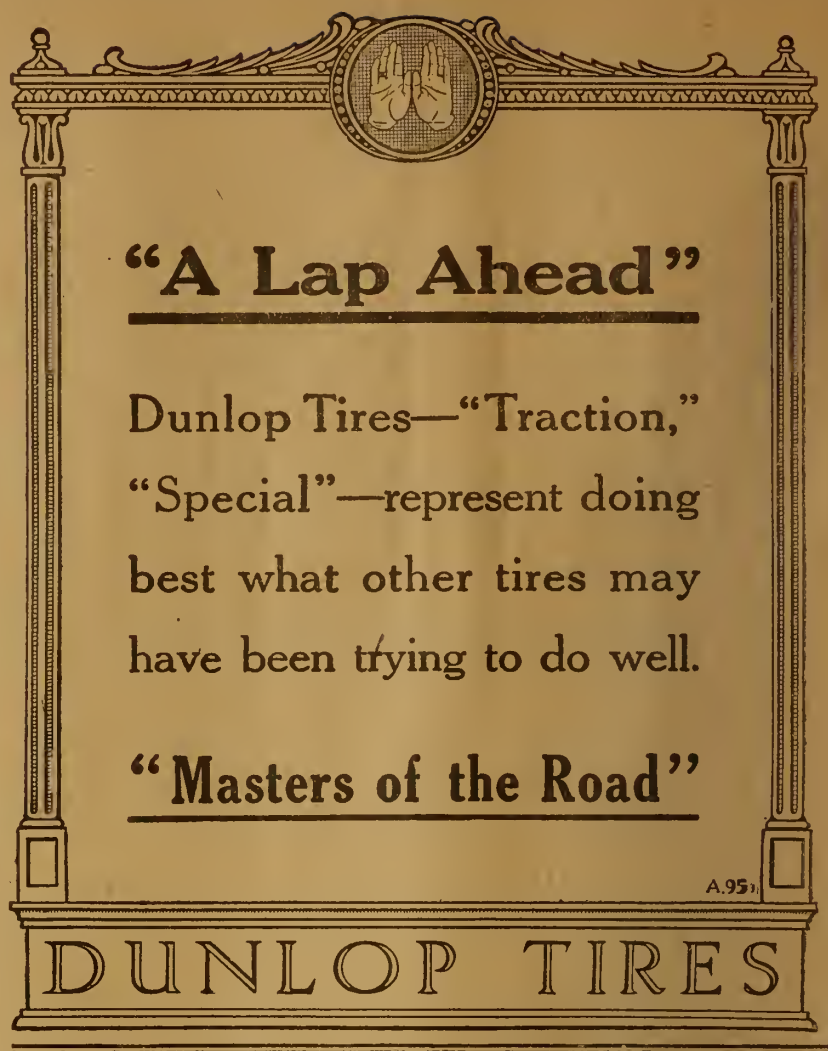
Don't park your car in the middle of the street or in the way of other drivers.

IT PAYS TO PAINT FARM MACHINERY

Would it pay to paint your farm machinery if by doing so you save 5 per cent. of the value of the machinery every year? In many cases capital is not available for the building of a tool shed but there are few farmers but who could scrape up several dollars for the purchase of sufficient paint to go over the machinery at least every three or four years. Of the various machines on the farm those constructed of wood should be painted most frequently. The manure spreader, the wooden-frame harrow and the farm wagon are some that need a good and frequent coat of paint, as they are more susceptible to weathering than iron-constructed machinery. These machines may be painted with a moderate-priced red barn paint. They should be scrubbed, rinsed and thoroughly dried before the paint is applied.

If the wood has become very open a primer should be applied first. A good method of priming is to apply heated linseed oil to the dry wood which makes a waterproof base for the coat to follow. The oil can be heated in a lard can over the shop stove. It might seem like an unpleasant task to clean up a manure spreader to paint it, but if any machinery needs it, it is the manure spreader, which is subject to the detrimental action of the manure on it causing it to rot rapidly.

It is also essential to paint iron-constructed machinery to prevent rusting. Some parts, such as planter, fertilizer cans and binder twine cans are galvanized, but in time galvanized iron will go through; it protects at its own expense, the zinc gradually disappearing as the exposure to the weather continues. The smooth-spangled surface of galvanized iron and steel parts will unfortunately tend to prevent the adherence of even the best paint and peeling may ultimately result. This condition, however, is obviated by first treating the smooth surfaces before painting with a solution of copper salts which may be prepared by dissolving 4 ounces of the chloride acetate or sulphate of copper in 1 gallon of water. By brushing on this solution the smooth surfaces are roughened, a thin deposit of copper being plated out over the surface. After an hour or so the surface may be dusted off and then painted with a prepared metal paint. Red leads and red or black oxides make good metal paints.—R. L. Sutherland.


"A Lap Ahead"
Dunlop Tires—"Traction," "Special"—represent doing best what other tires may have been trying to do well.
"Masters of the Road"
A.95
DUNLOP TIRES

KEEP SCREEN DOORS IN GOOD REPAIR BY PAINTING THEM

Fly time is here and the screens for the windows and doors must be gotten out of storage. In most cases this is going to reveal the sad effect of last season's neglect, and many of the screens will have to be renewed before they are used again.

Probably no other part of home equipment is so badly neglected or will return so much profit for a small amount of care as do the screens. In the first place, they should be substantially made, with corners well fitted together, fastened with screws and strengthened with flat corner irons. They should be made full length of the windows in most cases, should be hinged at top so they can be opened when desired. Each frame should be fitted carefully to its particular opening, and both opening and frame should be marked plainly so that there will be no chance for getting a frame in the wrong place. Don't depend on your memory or on a list posted some place, as you may not be there next time they are to be put in place. Metal figures made especially for this purpose can be purchased in nearly any hardware store, or very serviceable figures can be made by using the point of a screw driver.

When finished and properly fitted, the frames should be given two coats of good paint, especial care being taken to get the paint into the joints at the corners. They should then be covered with good wire screening. The copper coated wire is much better, but the cheaper black will give good service if properly cared for.

In the second place, the screens should be painted every spring before being put in place. The paint should be rather thin and should be brushed on each side of the screen, but not rubbed back and forth, as that has a tendency to produce air bubbles which will clog up the screen openings. Plenty of turpentine or other dryer should be used to make the paint dry quickly. A light coat should be given the frames, and at the same time any

Fredericton-Made Ironware Wears

Furnaces, Stoves and Utensils,
Mill Supplies, Contractor's Equipment,
Pig-Troughs, Oat-Boxes, Cow-tail Holders, Etc.

The Smith Foundry Company, Ltd.
FREDERICTON, New Brunswick

screens around porches should be gone over the same way.

In the third place, all window and door screens should be taken down each fall and stored in a dry place. If possible they should be placed straight on edge in a sort of rack to keep them from twisting, although they can be laid one on top of another if carefully handled. No chaff, hay, or other trash should be allowed to collect on them.

The writer, when a boy on the home farm, made a set of full length screen frames of pieces ripped from discarded lumber, fastened them together with nails and with no irons to strengthen the corners, painted them, and tacked on ordinary black wire screening. The first three or four years these were taken down and stored each fall and painted each spring before being put up. After that they were left in place the year through, but were painted each spring. When my father left the farm 14 years later, those screens still had the original wire on them and were apparently almost as good as ever. Since that time they have been in the hands of renters and have had little attention but several of them, now 18 years old, are still on the job and in fair condition. So don't be afraid to give your screens a little paint each spring.

STARTING GAS ENGINE

Many people have difficulty in starting and operating gas engines, particularly the stationary farm engine. In many cases they fail to get their engine ready so that it can go before they begin to turn it. I very seldom have occasion to turn my stationary gas engine over more than once or twice until it starts ready for business.

Nearly all engine troubles is caused by the ignition system, which is easily understood if studied. There are just three things to make sure of: if we have the gas, a good spark, and good compression the engine must start. By this I do not mean simply that you have gas in your tank, but that you must know that it gets where the engine can use it.

For instance: If your engine is cold it may either have to be primed or the needle valve may need to be opened an extra turn, or a little dirt in the carburetor will necessitate the opening of the needle valve another turn. You must close it again after the engine starts.

Again, when the engine is hot, priming or extra opening of the needle valve will cause flooding. If these things are attended to properly and the engine fails to start promptly after three or four turns, you may as well begin to look for the trouble. Do not, however, tear the engine all to pieces the first thing, as you are not likely to have to go very deep. It is usually the little things that are responsible for most of the engine troubles and the successful engineer will attend first to all minor details, the chances being that the major troubles will not materialize.

H. C. McCORMICK.

ABSOLUTE SAFETY FROM LIGHTNING

As the season for thunder storms approaches probably most of us owning buildings will experience more or less anxiety. It is comforting to know that almost absolute safety may be provided by rodding a building. It is also interesting to know that copper rodding is no longer considered necessary for lightning protection as investigations in Great Britain and the United States have shown that iron rodding is fully as effective but, of course, not so durable. As a result of experiments the United States Government uses on some of their most important buildings three strand barbed wire. The great number of sharp points aid greatly in dissipating the charge which a building accumulates during thunder storms.

The general directions for rodding a building must emphasize several points. First the rodding must be secured directly to roof, no insulation being provided. Secondly, all the joints where wire or rods are connected together in forming a sort of cage over building, must be well made and preferably flooded with solder. Third, the whole system must be well grounded. This consists in running wires or rods from building down to the ground water level or to the water in some nearby well. In large buildings, say, over 60 and up to 100 feet long, the rodding should be grounded at every corner. In smaller buildings, grounding at two opposite corners is sufficient.

If using wire proceed as follows: Roll up 25 or 30 ft. of end of wire into a ball and bury in ground at ground water level or at least in soil which will be damp all the time. When putting back earth pour water in hole. Run wire from this ground up to corner of building, and from there up to ridge, along same to other end and down roof to corner, down to earth grounding as before. From one other corner ground as before and run wire to roof and connect at peak with first wire. Do the same at last corner. Now run wires between these at eaves and at interval of 10-20 feet run wires from ridge to eaves. If barbed wire is used no points over ridge are necessary. If plain wire or rods are used points 4 or 5 feet long must be erected at space of 15 ft. or so along ridge and over ventilators and chimneys. In a word, the object is to make a continuous network or cage over the building, nailing same to roof with staples and grounding in damp soils. J. A. STARRAK.

Macdonald College.

TURNIPS REDUCE MUTTON COST

Turnips in the ration materially reduce the cost of mutton production. A recent experiment showed that when turnips were fed at the rate of five pounds a head in connection with one pound mixed oats, bran and corn, and about two pounds clover hay, the daily cost of the ration was about 4 cents an animal. Many farmers profitably can use roots as a cheap ration, producing their mutton and wool at a material saving.

Turnips must not be overfed to sheep, nor should they be used as the bulk of the ration. They serve as a laxative and produce scouring. Owing to their watery nature turnips render the ration more palatable, and are distinctly useful when fed in moderate quantities with roughage and grain. They prevent constipation and resultant ills which so frequently occur when sheep are changed from the pasture to the sheds and put on dry feed.

Water the horses when they are cool and before giving feed.

We have noted that the man with a bee in his bonnet is quite likely to talk through his hat.

Have some of those shingles blown off the barn? Put on some new ones before more blow off. "A stitch in time saves nine."

IMPERIAL SERVICE

If you are in doubt about the proper lubricant, *ask the Imperial Oil man.* He will give you courteous attention and sound advice on your lubrication problems. That is part of Imperial Service.

LET US BE RESPONSIBLE

PUT your lubricating troubles up to the Imperial Oil man. It is his job to know the just-right oil for every lubrication need. He will recommend the oil that will end your lubrication troubles.

There is a scientifically correct lubricant for every machine requirement. For high speed motors burning gasoline, for heavy duty tractor motors or stationary motors burning kerosene, for slow-revolving, heavy shafts, for open bearings, for loose bearings, for tight bearings, you require oil that has just the right body, consistency and lubricating qualities.

There is an Imperial Oil manufactured for each particular purpose. You can get it in any part of Canada at any Imperial Oil station. There is one near you.

Imperial Oils are supplied in steel barrels and half-barrels—convenient, economical. No waste. You use every drop you pay for and know that every drop is uniform and clean.

A Correct Lubricant for every Farm Machine

For Gasoline Engines, Tractor, Auto or Stationary
POLARINE OIL
STANDARD GAS ENGINE OIL
For Kerosene Engines, Tractor or Stationary
POLARINE OIL HEAVY
IMPERIAL KEROSENE TRACTOR OIL
(Recommended by International Harvester Co.)

For Open Bearings of Farm Machinery
PRAIRIE HARVESTER OIL
—very heavy body, resists cold, won't thin out with moisture
ELDORADO CASTOR OIL
—a thick oil for worn and loose bearings

For Steam Cylinder Lubrication, whether Tractor or Stationary Type
CAPITOL CYLINDER OIL
—the standard product for steam cylinder lubrication

THRESHER HARD OIL
For Grease Cup Lubrication of Bearings
a clean solidified oil high melting point

IMPERIAL OIL
LIMITED
BRANCHES THROUGHOUT CANADA

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on. as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will he allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—Four pure bred 2-yeer-old Guernsey heifers Calve in June. Sired hy a grandson, Daliy Bloom. Also five young hulls.—T. D. BLAIKIE, Great Village, N. S.

FOR SALE—Registered Ayrshire bull, No. 48032. Dam 31884 C.R.R. Also several registered bull calves.—E. CHADDECOTT, Monkham's Farm, West Merigornish, Pictou Co., N. S.

AGENTS WANTED—Portrait agents wanted. Send for Catalogue. Prints Solar and Bromide. Finished Portaits Convex and Fiat frames. Glass and all supplied. MERCHANTS PORTRAIT COMPANY, Toronto.

FOR SALE

Pure bred registered Percheron stallion, rising five years old. He is a first-class individual, a sure stock getter and will stand inspection anywhere. A bargain if taken at once.

A. S. HINGLEY,

Prince Str. House, Truro, N. S.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls. ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females. all ages.

McINTYRE BROS.

SUSSEX, - - N. B.

FOR SALE !

America's greatest winning marvelous egg producing (300 strain), Fawn and White Indian Runner Ducks. The hreed you'li eventually adopt Lay more eggs than poultry and eat less feed Large snow white fertile eggs $1.50 per setting. Safe arrival guaranteed. Order now

LORNE MURRAY, Harrow, Ont.

Pure Bred Poultry

Barred Rocks. White Wyandottes, White Orpingtons, White and Brown Leghorns, White Crested Black Polish. Choice hreeding stock from good laying strains for sale. Cockerels, $2.00 each. Special prices on pairs, trios and pens during Aug. and Sept.

H. M. McMONAGLE

FREDERICTON - - - N. B.

EGGS FOR HATCHING !

Breed Standard bred poultry and more of it. Eggs or stock from every popular variety can be had through our Association.

Eggs from all heavy breeds such as Bramahs, Plymouth Rocks, Wyandottes, etc., $2.00 for 15 eggs.

Eggs from the lighter breeds such as Leghorns, Minorcas and Black Spanish, etc., $1.50 for 15 eggs.

Write us your Poultry wants.

Cumberland Co. Poultry & Pet Stock Association

E. F. McKIM, Secretary

Amherst - - N. S.

IF YOU HAVE LIVE STOCK FOR SALE YOUR AD SHOULD BE IN THESE COLUMNS.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must he paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co.. N. B'

Ayrshire Oattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archibald, Truro N. S.
John H. Hugbes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Newburn Hill Stock Farm

Our present offering is one pure bred Shorthorn Bull, 11 months of age, also a few Heifers from one to three years of age. All of good milking qualities.

Beef, Hay and Potatoes in car lots.

Choice Cultivated Strawberries a specialty

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
UPPER SACKVILLE, N. B.

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,

New Mines - - - N. S.

QUALITY BRAND

Rabbitry and Poultry Yards

Amherst, Nova Scotia

E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur hearing animal living, price per pair..$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each. D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for hatching.....$2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching.....$4.00 per 15

We Guarantee Safe Delivery. Terms Cash with Order

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,

AMHERST, - - - N. S.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,

Truro, - - Nova Scotia

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY

Shubenacadie - - - N. S.

PRINTED
Butter Parchment

Revised Price List

We Prepay all postage to your home address

1000 1 lb. Printed, - -	$4.00
500 1 lb. Printed, - -	$3.00
1000 Printed, 2 lb. - -	$5.00
500 Printed, 2 lb. - -	$4.00
500 2 lb. Choice Dairy Butter,	$2.00
500 1 lb. Plain - -	1.20

Parchment marked "Choice Dairy Butter" 250 sheets, 75c; 500 Sheets for $1.45, Postag Paid.

The Maritime Farmer
SUSSEX, N. B.

FARMS FOR SALE !

1. Desirable farm for sale, situated at Lower Gagetown, N. B., containing 100 acres or therehy, suitahle for growing all kinds of crops; there is a splendid orchard on the property, containing about 500 apple trees of good commercial varieties.

The farm buildings are commodious and exceptionally good and there is ample water supply. Public wharf about one-half mile distant and railway runs through the property.

2. Farm with suitable house and huildings, situated ahout 3 1-2 miles from Gagetown, extending to ahout three hundred acres, ahout one hundred of which is good cropping land, the halance containing a large quantity of valuable pulp and firewood.

For further particulars apply to

JOHN MIEKLEJOHN, Agent

Crosser Farms, - Lower Gagetown, N. B.

FOR SALE !

In Shorthorns we have to offer a number of roans, reds and whites in both males and females, from young calves up. It would pay those wishing to purchase to come and see our stock before doing otherwise.

Our spring litters of Berkshires are all sold. Are expecting several summer and fall litters. Parties wishing to purchase please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

FRUIT PACKAGES

The fruit season is again drawing near. how about your boxes and crates for the coming season To pack and ship to the best markets, you require the best standard packages, which can be had by placing yopr orders early with the

Hantsport Fruit Basket Co'y.

HANTSPORT, N. S.

Advertise in the FARMER

A WAY TO SAVE SCRAPS OF FAT

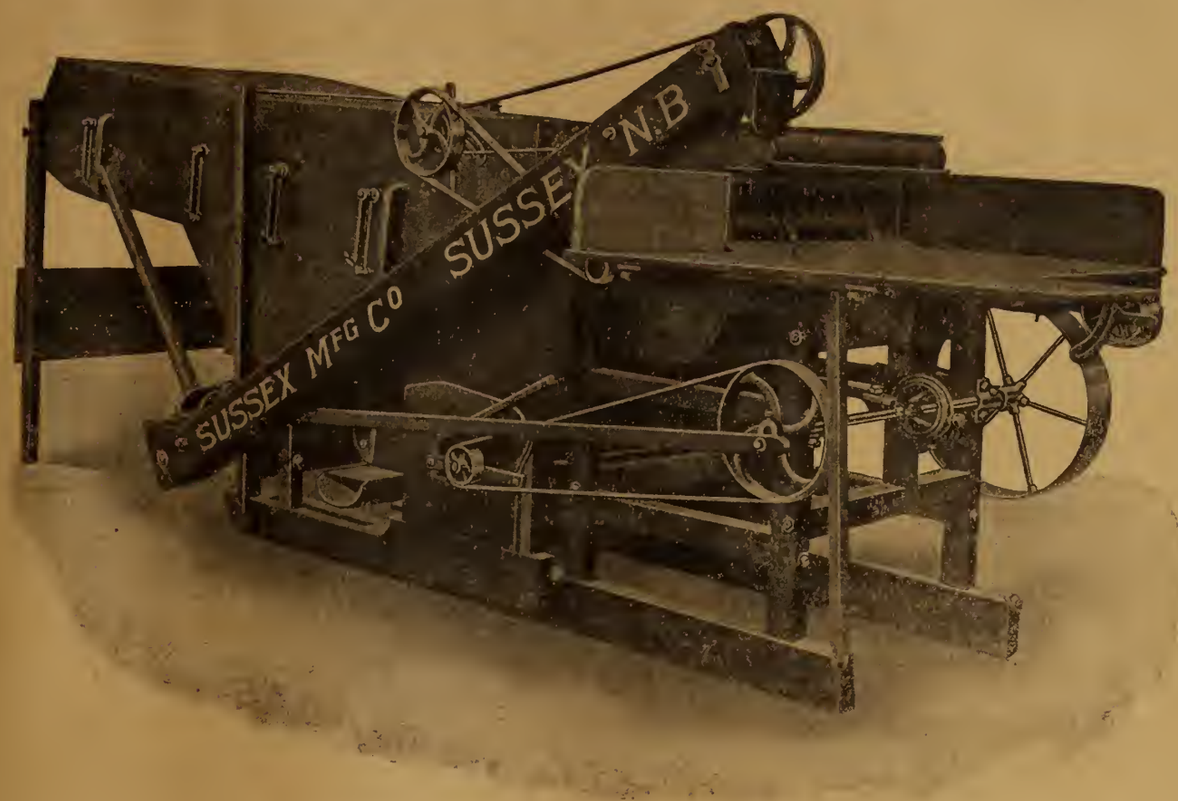
Drippings and scraps of fat cut from meat that is brought into the home, may be used in a variety of ways. Savory fat made from them will be found very useful in sauteing food. Meat or potato cakes, scrambled eggs and omelets are given a very good flavor when this fat is used. A very good savory fat may be prepared in the following way:

Cut the trimmings in small pieces, or put thru a food chopper. To one pounds of unrendered or rendered fat, add a slice of onion one-half inch thick, 1 tsp. bay leaves, 1 tsp. salt and 1-8 tsp. pepper. Put all in the top of a double boiler and heat till the fat is melted. Strain thru a cloth, squeezing to remove all fat from the cracklings.

ORDER A

Sussex Little Giant Thresher

and you will be prepared to get the very best results from your Fall's Threshing



MADE IN 4 SIZES.

No. 1 (or 4 Horse), No. 2 (or 2 Horse), No. 3 (or one Horse) No. 5 Big Giant.

Every machine can be supplied with Tailings Elevator, Bagger Trucks, or Straw Carrier, if required. No. 1 and No. 5 can be equipped with Grain Saving Windstacker.

WE GUARANTEE SATISFACTION.

Write to-day for our catalogue, it will pay you.

THE SUSSEX MANUFACTURING CO., LTD., Sussex, N. B.

PENALTY FOR DESTROYING OR PILFERING FRUIT

Protection against the serious losses experienced in the past through rough and careless handling, wilful destruction and pilfering of fruit shipments, has been provided for in the recent revision of The Inspection and Sale Act, covered by Sec. 331 of Bill 108, which reads as follows:

"331. Every person who carelessly handles, wilfully destroys or pilfers any fruit packed in any of the packages prescribed in this Part shall be guilty of an offence and liable upon summary conviction to a penalty not exceeding twenty-five dollars."

For the information and guidance of employees, the transportation companies are arranging to post notices in express cars and at fruit shipping points, while the public will also be advised through the press and by bulletin.

Proposed Changes to Express Classification.—Application has been made to the Board of Railway Commissioners by the Express Traffic Association for approval of certain changes and additions to Section No. 22, page 11, of the Conditions of Carriage, the following probably being of some interest to fruit growers and shippers:

"(a) Each package, bundle or loose piece in a shipment must be plainly, legibly and durably marked, showing the name of only one consignee, and of only one station, town or city and province to which destined. Old marks must be removed or effaced by the shipper.

(b) Shipments wrapped in paper, or packed in boxes, crates, barrels, corrugated strawboard, pulpboard or fibreboard containers must be marked with pen, brush, stencil, waterproof crayon, or by label securely attached with glue or equally good adhesive.

(g) **Nursey Stock and Trees** in bundles or bales must be marked with not less than two tags, securely attached, and when in bales, shippers should place a duplicate address tag inside the bael for the purpose of identification.

(i) **Lot Shipments**—Except when in carloads, each package or article in a lot shipment must be marked in compliance with these requirements."

Estimated Weight Strawberry Crates.—Until an estimated weight for the 19½ x 14¼ x 6¾-24 full pint crate, satisfactory to shipper and Express Company, is decided upon, the Dominion Express Co. will accept same as actual weight, instead of the tariff estimated weight of 22 lbs., applicable last season. This will apply more particularly to British Columbia shipping.

G. E. McINTOSH,
In Charge Transportation.
Ottawa, June 24, 1918.

PLOW WHEAT FIELDS EARLY

(From U. S. Paper)

The government asks us to abstain from the use of wheat. Every loyal American is willing to sacrifice everything that is necessary to win the war. With the vast acreage in wheat in the United States, and the amount of land still available, it would seem that there should be no necessity for curtailing the consumption of wheat.

Every acre now in wheat can produce from three to five bushels more per acre next year. This extra yield would practically feed the United States, even though no more land was utilized. The solution is plowing.

Plow at the right time; and the right time to plow is just after the grain has been cut, because:

1. The ground has at that time an abundance of moisture.

2. Having the moisture, it plows easier.

3. By plowing at that time, a mulch is formed which retains the moisture and rests the land.

4. By turning the stubble under, it has time to rot and act as a fertilizer.

5. The foul weeds are killed out, and the nourishment they would consume remains in the land.

Result: From three to five more bushels per acre.

Result of not plowing at once: Each stubble will act to the ground in the same capacity as the chimney does to the stove; each one will emit the moisture which is vitally necessary, and with it go the many elements necessary to crop production.

There is no reason at this time why the plowing cannot be done immediately after the grain has been harvested. If the weather is too hot for horses to stand this hard work, then put the tractor to work. The increase in crops derived from plowing at this time will more than offset the cost of the tractor.

In the event that skilled help cannot be obtained for the operation of the tractor, then convert the automobile into a tractor. This latter can be operated by anyone who understands running the car. The feasibility of this transformation has been demonstrated so thoroughly that there is no question in regard to the benefit derived.

This is "war time" and we have got to have the food. Cereals will bring in the money with which to help carry on the enormous expense that we are now put to.

Sheep on Every Hill Side in New Brunswick

The New Brunswick Government through the Department of Agriculture has arranged with the Chartered Banks to help the Farmers—where assistance is needed—to buy Sheep.

The Department will not only arrange to buy Sheep **FOR** the Farmers, but will also buy good breeders **FROM** the Farmers—in other words, this branch of the Agricultural Department **WILL SUPERVISE ALL PURCHASES AND SALES OF SHEEP.**

IF A FARMER NEEDS CREDIT TO BUY SHEEP he should consult his local banker who has the necessary forms.

If you cannot buy sheep in your locality, inform the nearest banker who will notify the Agricultural Department, or, better still, notify the Department yourself and say how many Sheep you want.

KEEP YOUR EWE LAMBS

Every Ewe Lamb, weighing 80 pounds and over and of reasonable quality, should be retained by farmers for breeding purposes. Sell the males and the inferior females for butcher purposes. If you have more ewe lambs than required, induce your neighbor to purchase.

THE VALUE OF WOOL

Unwashed Wool of the best quality brought 80 cents a pound this spring, or about $5.00 a fleece.

SIXTY MILLION SHEEP

Have been lost in Europe since the war started. Wool in enormous quantities is now required to clothe the soldiers, it will take an immense quantity to reclothe the returned men in civilian dress. Prices will likely be high for ten years.

New Brunswick has the pasture, hay, roots and a climate suited to Sheep. Every farmer should consider investing in a small flock as a foundation. The first year will give approximately $4.00 worth of wool per sheep, the sheep will cost about $15.00 Is it not a good business proposition?

If you cannot purchase locally, place your order with your banker. Orders will be filled, if possible, in the order filed at this office through the banks.

For further information apply to **J. F. TWEEDDALE,** Minister of Agriculture.

MARITIME WOVEN WIRE FENCING

The Fencing That Does Not Bend or Break

ALL fences manufactured by the New Brunswick Wire Fence Co. Ltd. are made by the most skilled labor and of the very finest materials.

The new slide locks are outstanding features in this fence. Every other device used in this fence to prevent side slipping or up and down movement has been thoroughly tested and is guaranteed to give satisfaction.

Every yard of fencing shipped by us is thoroughly tested before leaving the factory. Our fences are not painted, but are galvanized.

We also can supply you with steel frame gates, panel fencing, etc.

Our fencing is sold by dealers in nearly every section of the Maritime Provinces. If there is no dealer in your locality write direct to

THE NEW BRUNSWICK WIRE FENCE CO.,

MONCTON, N. B.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 23. SUSSEX, NEW BRUNSWICK, JULY 23, 1918. Number 20.

Drying---The Easiest Way to Save Food

Practical Suggestions on This Old-New Method of Saving What You Can't Can

Why You Should Dry Food for Winter

Drying is easy—a good method for the busy woman.

Drying is cheap—a good method for the economical woman.

Dried foods require little storage space.

Dried foods have lost practically nothing of nutritive value.

Why People Don't Like Dried Fruits

Because such foods are not blanched before drying, and consequently they are apt to be inferior both in flavor and color.

Because dried foods are often not soaked long enough before cooking, and so cook unevenly.

Because of poor cooking.

The food producers and food consumers of Canada are asked to conserve food. The farm homes of the Maritime Provinces are responding nobly to this call and those who are planning to take precautions that not a morsel of perishable farm grown food will be wasted, will read the following article by Helen Christine Bennett, which we reprint from the columns of the Pictorial Review for the benefit of our readers.

Whenever I begin to talk about "drying" I find that I have run against a deep-rooted prejudice. Most folks like canned goods, but they turn up their noses at anything that is "dried." It is for this reason that many of the Experiment Stations have adopted the term "dehydrating" in place of "drying." Dehydrating and drying are practically the same thing—taking out the water—only the modern system of dehydrating involves one other process which keeps the color of the vegetables and helps to retain their flavor. I am going to describe this process, but use the old term. It is shorter and less confusing and in these war times people ought to begin to discard their food prejudices.

This new system of drying, like the cold-pack system of canning, has many advantages over the old, the chief one being improvement in the color and flavor of the dried foods. In the second place, drying is easy. It is a good method for the over-busy woman or for the lazy woman or for the woman who "simply can not stand the heat." If you are any one of these, investigate the new drying.

Thirdly, drying is the method of all methods for the woman who has little space in which to store things. We are told that our enemy, Germany, stores enough nutritious stew in a small paper bag to feed a score of men and that this dried product is not only nutritious but palatable, which fact is testified to by Americans who were temporarily made prisoners at the time of the Belgian invasion and fed on paper-bag stew. A roomful of dried products means food for a regiment. The city woman who lives in an apartment with a kitchen just big enough to turn in can store a Winter's supply on a shelf. And lastly in our little sermon, it is self-evident that drying is the most economical method of food preservation.

Almost anything can be dried—beans, corn, peas, spinach, squash, cauliflower, cabbage, celery, apples, peaches, cherries, berries, tomatoes, etc. None of these things will taste "just like the fresh," or at least they do not in my experience. Neither do dried products take like canned products. And why should they? The point is that they taste good, if they are prepared in the right way.

The right way includes blanching, that is the cooking of the fruits or vegetables in boiling water for a few minutes before they are put out to dry. This, in my estimation, is even more essential in drying than in canning, and it is certainly worth while in canning. There are certain acrid odors and tastes that seem to stick to vegetables and fruits through thick and thin which only thorough blanching removes entirely. Color, which adds so much to the good "taste" of a vegetable, is much better in blanched vegetables.

To dry vegetables, clean, cut into thin strips or shreds, and drop into boiling water. Add one teaspoonful of salt to the gallon. Use a bag for this dipping as it is used in canning. When the vegetables are put in, the water naturally sinks below boiling-point. Bring it up to a boil again as quickly as possible and boil from one to five minutes. Soft, young vegetables take less time than hard, old ones. Fruits require less time than vegetables. Count one to three minutes from the time they are placed in the water, even if the water does not boil. They must not get mushy. Blanching pays well with apples, peaches, pears, apricots and quinces as it prevents them from turning dark. The only things which should not be blanched are soft berries of any kind, spinach or any greens, tomatoes, and herbs.

An Inexpensive Outfit

Drying outfits are cheap. A good many women have one like my own which consists of one clean old sheet. I happen to have a flat roof so high that it seems to be free from flies; a door gives easy access to it. On this flat roof I place my sheet and on it I put my materials ready for drying. I gather up the four corners and take the sheet in at night and put it out in the sunshine the next day. When the vegetables seem quite dry I put them into my oven in roasting-pans for a final drying off and then store them in my glass jars that are too crippled for canning.

One of the best home driers which I know is the one recommended by the New Jersey State Experiment Station. It uses the kitchen stove in this way. The ovens in most stoves have little supports on the sides for the purpose of holding the grate at various heights. To make drying trays for such an oven cut heavy galvanized window screen, one-eighth of an inch mesh, the exact size of the oven. Have your plumber bind the edges of each piece and reinforce it with strips running across. Fit the trays thus made into your oven and rest them on the grate-supports and you will have a series of oven-trays upon which thin layers of food may be placed.

This kind of drier may be used in coal, wood, as, or oil stoves; the only thing to be careful about is that the oven does not become too hot. To avoid this, **never close an oven door on drying food.** The gas or oil flame must be kept very low. In many gas ovens a pilot-light will be all the heat needed. An over-thermometer is a good thing; 130 to 160 degrees is hot enough for drying. If the oven door is shut, not only will you stand a chance of burning you food but the dried product will have an acrid taste and odor that you will not like. Give all drying things plenty of air.

The commercial driers are made of racks very similar in construction to the ones I have mentioned, only these are built into a wooden or metal frame and held thus in tiers. There are many home driers made after this model. They are intended to be hung over the kitchen stove if coal or wood is burned or to be set over a low flame on a gas or oil stove. The country woman who has her wood fire for cooking and lets it go out between meals, can economize by using one of these hanging driers over the stove morning and evening and taking it out into the sun through the day. All drying foods must be screened in some way to keep them free of flies and bugs. If you do not protect them you will have a lot of little worms developing in your dried product.

I do not know how to tell any one when dried products are really "dried"—that is, are ready to put away. I take my dried foods to the pantry and leave them in the glass jars where I can see them. If they are looked at in the early morning the glass will show any signs of moisture left in the products. If the dried products are stored in paper bags or boxes, you will have to open these and pour the contents out and air them and put them back repeating the airing process for several days.

My glass jars are a great time-saver and I am going to give them special mention because I know it is a practise in many households to throw away defective jars. If a jar has a defect that is likely to give the family broken glass to eat, throw it away by all means. But never in this day of glass shortage throw away a jar that is merely cracked or chipped a little at the mouth. In my household such a jar is washed and marked with a conspicuous label bearing a red border. Such marked jars are then placed in one corner of a shelf and from them we draw our supplies for storing rice, cereals, sugar, prunes, and a number of our dried products. We cover the jars with tops that have also proved defective. After three years of canning I have a number of these cast-offs and they are not only safer than paper boxes or bags, since they will not tear or break or let in insects, but they look so much better on my pantry shelves. I use no rubbers with these jars and I do not screw the tops tight. Other containers for dried foods may be made on the tin boxes which are bought with coffee, tea, and some biscuits. Paper bags seem to me a last resort; boxes are better. Bags are hard to keep clean on the outside and are apt to get brittle and break when products are being removed, and they always look untidy.

Beware of Insects

The glass jars enable you to watch closely for any insect life that is developing in the dried product. The appearance of any kind of worm or bug on a dried product does not mean that the product is lost, but it is a time for quick action. When a bug appears, take out the dried product, place it in a pan or on a rack, and put it in an oven at 140 degrees. Let it remain there at least two hours. Any bugs will be so dried up at the end of that time that they will be invsiible and can be washed off when the dried product is prepared. I have saved many a quart of dried beans in this way.

Dried products must be kept in a dry place or they will absorb moisture. Attics are the best places, unless you have a dry, well-ventilated pantry or

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FLIES---Prevent Them

"Johnnie, shut that door. You'll have the house full of flies."

How often has your mother said something like that? And what did you think when she said it? Very likely you have heard that command dozens of times and thought nothing of it or, if you did think about it at all, you supposed that her chief objection to flies was that they were a nuisance. They are much more than that; they are dirty, dangerous, and a distinct source of loss to every dairyman.

Cows that spend part of their time fighting flies can't do their best work and a drop in the flow of milk is the result. Nor do the calves escape. You know very well that calves born in the late spring and early summer seldom do as well for the first few months as do those born in the winter, which simply means that it costs more to raise them and this can in part be charged up to the flies.

Another thing, where are flies most often found? Isn't it around a manure pile, an open privy vault, or any other kind of filth? Filth seems to be a fly's natural home, but the worst of it is it won't stay home. From there it may fly directly to the house and while the screen door may stop it for awhile, it gets inside sooner or later, and finds an opportunity of wiping its feet on some of the food. And that fly may actually bring some of the filth with it, too, because its body and legs are covered with hairs and bristles of different lengths.

Even worse is the possibility that that fly may carry disease. It may feed upon some filthy substance, possibly the excreta of typhoid or dysentery patients, or the discharge of some one suffering from tuberculosis. These short hairs and bristles just mentioned make a fine place to carry disease germs that may later be left on some article of human food.

Nor is that all. Asiatic cholera and infantile diarrhoea are spread in the same way and there is very strong evidence that the fly may also carry anthrax, yaws, smallpox, tropical sore, and parasitic worms so there is every reason to "swat the fly" at all times.

Naturally, the very best way to fight flies is to prevent them and in order to do this we need to know something about the way they live and multiply.

In the first place there are many different kinds of flies, among them the common house fly, the stable fly, the blue bottle fly, the green bottle fly, the little ohuse fly, the fruit fly, and a host of others. Of these our common house fly is by far the most numerous and the greatest pest. Probably 90 per cent of all the flies that got in your house last season were of that kind, so the house fly is the one for us to study.

It commonly lays its eggs upon horse manure, but it will also breed in hog manure, human excreta, and to some extent in cow and chicken manure. In fact it will lay its eggs on almost any kind of decaying vegetable or animal matter, such as rotting potatoes, ensilage, or garbage.

The number of eggs laid by a single fly is very large, probably averaging from 300 to 500. These eggs are deposited in small cracks and crevices just below the surface of the manure, where the heat from the fermentation below will keep them warm. They usually hatch in less than 24 hours and if the heat and moisture are just right it may only take about eight hours.

The maggots that come from these eggs are small, white, and nearly transparent. They feed on the manure and grow rapidly until they are about ready to pass into the pupa or sleeping stage which usually takes four or five days. Near the end of this period they get restless and usually move from their feeding ground to the edge o fthe manure pile or burrow into the soft ground nearby. Sometimes they even go quite a distance and crawl under the edges of loose material like stones, boards, etc.

The pupae or sleepers, as they are sometimes called, are almost barrel shaped and brown in color. This stage lasts only four or five days during the warm weather of midsummer but colder weather may prolong it even up to four or five months.

At the end, the adult fly emerges, works its way upward through the soil or manure, and crawls around in the air until its body hardens and its wings dry and expand. In a few days, three or four, this same fly, if a female, will begin to lay eggs and so start the whole cycle over again. So you see it only takes about twelve or fourteen days from the laying of the eggs until the young females from those eggs are ready to lay eggs themselves.

This same cycle of life continues time after time throughout the summer and accounts for the immense number of flies that we see late in the season. It is estimated that if the offspring of a single female fly were allowed to increase without checks from the middle of April to the middle of September, and if temperature and moisture conditions were most favorable, we should have 214,557,844,320,000,000,000,000 flies. Of course, this is a physical impossibility because the fly has many enemies that destroy it and conditions for its rapid increase are not always favorable. It does, however, give you an idea of what is possible and why the best and easiest way to fight flies is to prevent them.

How do flies pass the winter in our northern and central states? We seldom see one during the later winter months and yet there is no lack of them after the first few warm days of early spring. We used to think that the grown flies themselves, or some of them at least, spent the winter hiding in cracks and crevices in buildings, but this has never been proved and probably is not true. In fact, men have tried to keep flies over winter in cages inside heated buildings but none lived over 70 days.

The probability is that the fly passes the winter in the pupal or sleeping stage and emerges as an adult fly when the warm spring weather begins.

How to Fight Flies

Now, knowing something about their life history, where would you begin in an effort to prevent flies? Unquestionably the time to destroy them is before they begin to fly about and lay their eggs, which means either during the pupal or larva stage. Of these the latter is the easiest because at that time they are still at home in their breeding places.

The firs step toward this end would be to get rid of these breeding places, the manure piles and filth accumulations. Part of this can be done. More manure could be hauled directly to the field, garbage cans kept covered, and other breeding places gotten rid of. However, there is always some manure from the horses that cannot be hauled to the field daily during the summer and this is probably the largest single breeding place for flies on every farm.

Since we cannot get rid of the breeding place entirely, the next best thing is to treat it with something that will kill the fly maggots or larvae. For this purpose powdered borax will give the best results. Use about one pound of borax for every sixteen cubic feet of manure, sifting it evenly over the surface of the pile and a little heavier at the outer edges. Sprinkle water on afterwards or else dissolve the borax in water an dsprinkle the solution over the manure.

This will kill a majority of the maggots and in addition may even prevent some of the eggs from hatching. Borax does not injure the manure but it is possible that an excess of it might be injurious to growing plants, so do not use more than 15 tons of the treated manure per acre. If it is desirable to use heavier applications, powdered hellebore should be used instead of borax. Make up a solution of one-half pound of hellebore to ten gallons of water, and after allowing it to stand for 24 hours sprinkle it over the manure at the rate of 10 gallons for every 10 cubic feet of manure.

In addition to destroying as many breeding places as possible and treating the others with some chemical as recommended above, there are still other things you juniors can do to help swat the fly. Spray the cattle that are out of doors regularly with some good fly repellent. There are several on the market or, if you wish, you can mix one yourself using fish oil (1 gallon), oil of pine tar (2 ounces), oil of pennyroyal (2 ounces), and kerosene (½ pint).

Screen the windows of the house and barn and make every effort to keep the flies away frod food. Hang gunny sacks over the stable doors so that the flies are brushed off as the animals enter.

Trap and poison flies. There are small screen traps on the market that can be used in the house or you can make some yourself. Fly paper and poisons can be used, the latter with care.

The last are but helps to fight the adult flies. Remember, the most important thing is to prevent them.

Handling the Barley Crop

Some Precautions That Will Make Harvest Work Less Disagreeable

A study of the crop reports from the different grain-producing sections indicates that an enormous increase in barley acreage has been seeded this year. Not only is the amount increased in the old barley sections, but some parts of the country where the crop has not previously been grown report heavy seedings.

Several factors have brought about this crop change. Farmers have substituted barley for oats in order to help relieve the bread-flour shortage. Some have put the crop on land that had been intended for corn because the labor shortage made the cutting down of cultivated acreage necessary. In other sections of the country, where wheat normally follows corn, the corn was down so bad last fall that the wheat could not be seeded, and barley is being used to take its place.

Whatever the reason for the change, hundreds of farmers are growing barley who never before had experience with the crop. They have seeded it about as they would oats, and most of the stands which I have observed are heavy and in good thriving condition.

With the coming of harvest, special pains must be taken to keep the grain in the best condition possible. Barley ripens rapidly. It must be watched and cut when the straw first becomes yellow, or it will crinkle down badly. It should be left in the shock for about ten days, or until cured, and then, if possible, stacked or stored in barns.

Many farmers thresh from the shock, but in the case of bad weather barley discolors more quickly than either wheat or oats, and if this condition occurs, it makes a low grade of flour. Of course the crop may not be called upon heavily for human consumption. If this crop produces a billion-bushel wheat crop, most of the barley will be available for feeding purposes, but we want to handle the crop with the idea that every bushel is destined for the bread basket, and to care for the harvesting accordingly.

Another factor in connection with the reaping and threshing of barley deserves consideration. That is the point raised by so many men that the crop is disagreeable to handle. One hired man jokingly told me that the other hand would drive the binder, he would oil it and feed the horses, and the boss would do the shocking if it got done. His remark expressed the dislike which is prevalent among farmers who are not used to the crop.

Work in barley harvest is disagreeable because of the long, barbed beards which the grain carries. They break off easily, and fasten themselves in the clothing or in the flesh if driven under the skin. If not removed from the flesh they cause disagreeable festers. However, if a barley harvester is willing to take a few precautions demanded by the nature of the crop, he will find the work just as easy and agreeable as a wheat harvest. Otherwise he will probably provide himself with reasons for cussing his job.

I once harvested for six weeks in Southeastern Wisconsin, where bearded barley is the grain crop of primary importance. While there, I picked up some good, homely practical points which I was never taught in agricultural college, but which the harvesters found to be very valuable in safeguarding their physical comfort. I want to pass some of these worthwhile ideas on to those who may handle their first barley crop this season.

In the first place, on the morning harvest bgins, put on old clothes that can be thrown away when the threshing season is over. They will become so infested with prickly beards that they will be useless for future wear.

Do not wear socks. This may sound homely and senseless, but I know by experience that the beards are bound to sift into the shoes, and if socks are worn the pain sometimes becomes a torment, especially on warm days. If the feet are bare this distress is not noticeable. In case beards do break off under the skin, remove them at once. If the body becomes sore, a salt water bath will promptly relieve it.

When threshing begins the men who work round the machine should wear veils over their noses and mouths. This may sound foolish to men unacquainted with barley, but I can assure you that where the crop is regularly grown the threshers make this a constant practice. They know the discomfort caused by barley beards, and guard against it. The veil not only

keeps out the dust and chaff, but it does away with the danger of getting a beard in the mouth or nose.

I once saw a boy suffer for several days with pain caused by a barley beard which stuck in his throat while he was working on a straw pile. A veil would have prevented this.

If these precautions are observed, I am sure that no moer discomfort will arise from handling barley than from handling wheat or rye.

The country needs the barley, and the big seeding in this spring is striking evidence of the willingness of American farmers to produce the crops asked for. Whether the barley is used for human consumption or for stock feed, it is important to get the crop harvested in the best condition possible, and to do the work with the least discomfort to the laborers.

Fighting the Stomach Worm

By Dr. A. S. Alexander

More than ever before it becomes imperative to fight the stomach worm in lambs and sheep, now that every pound of wool and mutton is so sorely needed at home and abroad. Not only this, but everything possible must be done to prevent losses from other pests and diseases of sheep and the shepherd therefore must be vigilant and active if he is to succeed. The lack of help also makes the situation more difficult than usual, and for that reason it will be well to adopt the methods of management and treatment most easily followed and requiring the least assistance.

The latter consideration and the results of recent experiments make it evident that sheepmen this year should resurrect the old practice of administering sulphate of copper (bluestone) solution to lambs and sheep for the destruction of stomach worms. The gasoline treatment, so widely given, is fairly effective, but the fact that three consecuive doses are needed for the destruction of stomach worms and that some shepherds even give an extra dose 10 days later makes the treatment laborious and expensive and entails the employment of extra help. The treatment with bluestone solution, on the contrary, is quickly given in that but one dose is necessary and it would appear from experiments to me mentioned here that the worms are more surely destroyed by this drug than by gasoline.

Beginners in the sheep business probably have not heard much of the bluestone treatment, but we remember well when it was aired in the live stock and agricultural papers in the early nineties. Hutcheon of South Africa about 1891 intimated that bluestone in solution was deadly to stomach worms, but his method of administration was rather elaborate, his doses having to be graduated carefully for lambs and sheep of the different ages. This, we fancy, kept shepherds from immediately and everywhere adopting the treatment as standard, but a simpler method of treatment now has been suggested and proved effectual and should be given a thorough trial wherever stomach worms are prevalent.

The Hutcheon method published in many journals and notably in Joe Wing's little book on Sheep Farming in America, was to dissolve one pound avoirdupois of pure, finely powdered sulphate of copper (bluestone) in 2 to 4 quarts of boiling water and then add additional cold water to bring the total quantity of solution to nine and one-half gallons of water. This solution was to be given in the following doses:

Lambs 3 months old.....¾ ounce
Lambs 6 months old.....1½ ounces
Sheep 12 months old.....2½ ounces
Sheep 18 months old.....3 ounces
Sheep 24 months old.....3½ ounces

In making the solution only the purest bluestone was to be used, the amounts to be very carefully weighed and measured and the doses to be given strictly in accordance with the above table.

Stiles in America confirmed the work of Hutcheon as to the efficacy of this solution and many veterinarians and sheepmen gave it a trial, but for some reason or another the treatment did not come into general use.

Knowing that little definite and scientific work had been done to prove the degree of efficacy possessed by the different anthelmintics (worm destroyers) in common use and commonly prescribed Maurice C. Hall and Winthrop D. Foster, zoologists of the Bureau of Animal Industry, of the Department of Agriculture undertook a thorough research of the subject, trying out each anthelmintic in turn and collecting and examining all feces passed by the treated animals for several days after dosing, to recover all the worms present, then killing the animals and collecting the worms remaining.

These investigators concluded that it was unnecessary to follow the elaborate dosage plan of Hutcheon in the administration of sulphate of copper solution to sheep, so, for the sake of simplicity, they made up a 1 per cent solution of the drug and administered it in doses of 100 mils (or about 3 ounces) to adult sheep and of 50 mils to lambs under 1 year old. Three sheep so treated passed respectively 120, 240 and 314 stomach worms and showed after death the presence of 0, 49 and 3 respectively. It was found that 100 mils was somewhat too large a dose and finally 50 mils, or a little under 1½ fluid ounces, of the solution was enough for a sheep of any age.

In administering the solution a simple apparatus was used. It consisted of an overhead keg from which ran a rubber tube from a pipe let into the side near the bottom and having a nozzle attached to the free end for inserting in the mouth of the sheep or lamb. A graduated glass cylinder was placed in the course of the rubber tube and pinch controls placed upon the tube so that a correct dose might be let into the cylinder, stopped there and then allowed to flow into the sheep's mouth. Working with such an apparatus two men were able to dose at the rate of 100 sheep per hour. No bad results of any sort were experienced from thus administering an average dose of 50 mils of 1 per cent solution of sulphate of copper to the sheep treated.

A 1 per cent solution is made by dissolving 1¼ ounces of sulphate of copper in a gallon of hot water and of this the average dose is a little under 1½ ounces per animal.

The investigators found from their experiments that sulphate of copper solution earned a per centage of 93 in efficacy compared with 35 for gasoline. To this has to be credited to the copper solution the fact that but one dose did the work whereas three doses of gasoline, repeated on successive days, would b needed to obtain approximately the same results. The copper solution therefore proved for the better anthelmintic for sheep in that but one dose was needed, 1½ ounces sufficed instead of the 6 ounces of gasoline emulsion generally employed and much less labor was involved.

We hope that many readers will give the copper solution a trial this season, but let no man conclude that it will be safe to depend upon it to perfectly remove the stomach worm menace from the flock. Prevention remains much more important than medicinal treatment, no matter what drug is used. We are absolutely convinced from long observation and experience that the stomach worm, and every other internal parasite for that matter, gains the ascendency and emaciates or kills the young animal that lacks resistant power by reason of insufficient nourishing feed. In a general way it may be said that every lamb is exposed to stomach worm invasion for practically every adult sheep harbors these worms through the winter season, and with them contaminates the pasture for lambs in spring. But well fed lambs that are kept growing fast and that have inherited strong constitutions from properly fed and exercised robust sires and dams do not offer the worms their best chance for success after invasion and usually manage to withstand their presence and outlive and out-grow their weakening efferts. While this is so it nevertheless is unfortunate that any lamb should have to fight against the ill-efferts of internal parasites and for that reason every effort should be made to keep lambs growing and developing fast at the same time lessen to the utmost degree the chances of worm invasion. To that end, as every reader of this journal and of Prof. Frank Kleinheinz's admirably practical book on sheep management well knows, new grass and other green pastures should be supplied in rapid succession for the growing lamb, such rotation of pasture being as necessary for sheep as rotation is imperative to conserve fertility and insure disease-freedom for farm crops. Uncontaminated drinking water also must be supplied and the greatest possible care taken to prevent fouling of the ewe's udder with filth from old shep yards if intestinal worms are to be prevented. Eggs and embryo worms are contracted from such sources as well as from bare-bitten, sheep tainted pastures and the need of drugs and drugging will be greatly lessened by good management to avoid such dangerous features in the surroundings of sheep on the farm or ranch.

Dr. A. B. Arbuckle says:—"Any flock that is grazed from year to year on old pastures is sure to present problems that will tax the best of us.

I have used two forms of remedies with fair success, but I am convinced that an "ounce of prevention is worth a pound of cure," in this case at least. When an animal becomes badly infected, particularly a lamb, it seems practically impossible to get it back to sound health and perfect development. A lamb cannot grow normally when infected, and often becomes a sad spectacle, even though it may be saved. Therefore it is only as the last resort that I use the remedies referred to.

In recent years I have adopted the rotation plan with marked success, and, if faithfully and systematically pursued, I am sure no one need fear stomach worms. A few details must be given, as much depends upon accurate application of the plan.

First, seven pastures are required, and these must be used in definite succession. If the proper interval is not maintained the whole scheme falls through. It is, therefore, important that, under no circumstances, must sheep be allowed on any given pastures for a period of forty days, which suffices to exterminate all the larvae, except perchance a few that might be saved by finding lodgment in rabbits or other grass eating animals. Horses and cows will pick up and transmit a few. The eggs that are deposited hatch in seven or eight days and produce larvae that crawl or slide up on the grass blades, awaiting the host that must take them into the stomach for full development. If this host fails to appear in thirty days the larvae succumbs and the pasture is safe. Anyone seeing this can comprehend the plan very readily.

Second, the rotation must start about April 15th and be kept up until September, or until frost.

Third, the length of time given to each pasture is seven days. The sheep are removed to a new pasture each week.

Fourth, it is best to see that no shelter is so situated that rain can wash the droppings with the eggs to adjoining pastures.

Here is the rotation plan. It works. Last season not a single lamb showed symptoms of stomach worms, and one lamb was killed and examination revealed not one worm in stomach or intestines.

SAVING THE CALVES

One time, not so very long ago, no one bothered about the unwanted dairy calf. In the second or thrid day of his existence his career was, as a rule, ingloriously ended. Times changed. Stock values gradually went up and the poddy was no longer a burden to be killed and buried. But there were further honors awaiting him, for statesmen are now asking if his life should not be protected till he has at least reached the beef stage. Legislation of this sort is not the easiest imaginable. The state government of New South Wales has another scheme in view. They found that the Raymond Terrace factory was feeding no less than 70 calves with the refuse buttermilk and the directors were making good profit. So the government has decided that if other factories are not enterprising enough to follow suit they will establish the calf nursery themselves, just to shame the factory into the business. It's a good idea. There must be money in it for every factory, especially those which have no sale for the buttermilk. In some districts the directors put the buttermilk into pork and do well.

FINENESS OF LIMESTONE

From experiments with lime of varying fineness, conducted to determine whether the extra cost of lime finely ground is justified, the Pennsylvania Station concludes:

"On the basis of the data accumulated on the behavior of the varied sized imestone particles when incorporated in an acid soil, it may be concluded that an application of limestone in which the entire product consists of very fine material is less desirable than one consisting of varied degrees of fineness.

"The increased cost of the very finely ground limestone, together with the rapidity with which it disappears from the soil as compared with coarser materials, leads to the conclusion that an application of material all of which will pass a 10 mesh screen and include al lof the fine material incident to such grinding is sufficiently fine for soil improvement if applied somewhat in excess of the immediate need of the soil."

DEHORNING CALVES

Young calves can best be dehorned when from three to five days old, or as soon as the small buttons, which later become horns, can be felt. Clip the hair away from around them and smear a little vaseline around each button. Then moisten one end of a stick of caustic potash and rub it on the spot until the skin bleeds slightly. The vaseline protects the skin around the future horns, but care must be taken not to have too much water on the caustic potash or it will run down the head and take off the hair; or, worse yet, get in the animal's eyes. Also. always be sure to wrap a piece of paper or something around the stick to protect the hands of the operator.

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JULY 23, 1918

DATES OF ISSUE.

August 6-27
September 10-24
Octoebr 8-22
November 5-19
December 3-17

CATCHING THEM YOUNG

Much may be done with a lad in pedigree stock breeding if he be caught young. The whole world seems awakened to this fact. Never has such appeal been made to the youth of the land, girls as well as boys, as in recent years in the development of the calf, pig and sheep clubs. The thought is flowering finely in this country, and the push-ahead in increased supply and improved quality can not be estimated in the calculations of economists. They have caught the idea down in Argentina, where they are not slow indeed in the utilization of methods which make directly for the expansion of stock production. The Aberdeen-Angus breeders' association of Argentina has instituted a judging contest at its annual exhibitions for boys between 15 and 20 years of age, and also for boys below 15 years, thus emphasizing the value of beginning early with the education of a boy as with the fitting of a calf. Medals and diplomas are the rewards of superior talent in these contests. The diploma, time-honored emblem of superior achievement from the Sunday schools to worlds' expositions, is in favor with the South Americans, and medals are also given. A modicum of cash is herewith suggested in addition, or in lieu of medals. Cash is wonderfully potent in directing aright the effort of the young, in encouraging endeavor, in stimulating purpose. It requires only a litttle, but that little money, paraded with pride by the lad as his very own transcends any other appeal. It is gratifying to note this recognition of youth in that stripling nation of vast possibilities and giant strides in live stock progress.

The live stock judging classes at our Maritime Fall Fairs and in past years at the Maritime Winter Fair developed some excellent judging talent among our young farmers.

PROMPT VETERINARY TREATMENT

Not long ago a farmer of the old school experimented for a couple of weeks on his sick hogs. He fed a hog tonic and various concoctions the knowledge of which he inherited from ancestral swine breeders, bnt a few more hogs got sick each day and they began to die faster and faster. He winced under the strain as hog after hog went under the sod. . He thought it might be cholera, but he did not know. Finally his wife persuaded him to call a graduate veterinarian and to agree to follow his suggestions. She thus virtually secured a promise that her husband would vaccinate his remaining hogs and stop the loss. A post mortem revealed unmistakable cholera leions and all the hogs on the place, big and little, were given the serum and virus, with the exception of a few very young litters. Over 150 head were treated and thirty of them were noticeably sick. Only seventeen of these died and all the others were saved. He paid $137 for the treatment—the value of four of the fifteen hogs that he had buried during his trial of home doctoring.

After recounting this experience and the outcome, this gray-haired man declared that the burial of $450 worth of hogs had taught him that prompt veterinary advice and treatment is the best investment a farmer can make when an animal is seriously sick and he does not know what will cure it. He regretted that he had not called the veterinarian sooner, but he thanked his lucky stars—and his wife—that he called the doctor when he did.

The high values on live stock will doubtless serve to teach many others that the money paid for needed veterinary services is well invested. The moment an owner admits to himself that he does not quite know what is wrong or what will cure an aliing animal, it is time for him to call the veterinarian. A few dollars spent for such service during the year will save a few hogs or calves, a cow or a horse. It is a better interest-paying investment than War Bonds and just as necessary for the feeding of the national army.

CULLING THE SALE BULLS

A manager of auction offerings of the beef breeds requests us to urge a more rigid culling of sale bulls. The culling should be done many months before sale time. It is an essential operation in every herd of cattle the owner of which has his face set towards improvement. Naturally sale managers delight in offerings of class and condition, as averages are generally accepted as the measure of a sale manager's ability. This gauge is not justly applied, without a consideration of the circumstances. Tail-enders are inevitable in every offering, although the tail-enders in some sales are better than the tops in others. The temptation in times of high level of values is to save all bull calves. Not many herds can follow this practice and still preserve their hard-won reputations.

The safe plan for sale managers to follow is candidly to acquaint the public with the character of the stock to be offered. When a sale report declares that the class of cattle surpassed expectations the effect is far more agreeable than when the reporter must record the presence of undesirable animals as tending to lower the average. "Scalawags" have no place in a public offering to which breeders are invited, but in times of high-priced feed mere leanness of condition must not hastily be taken for absence of intrinsic merit. Beginners usually find their first lesson in preparation for sale; sometimes it is a costly lesson. Flesh and blood contrbute mightily to satisfactory averages, even with the keenest of judges at the ringside as bidders.

Any representation before a sale that must be corrected afterwards, in the light of low prices, are sure to react disastrously. Not all offerings can be composced of top-notch animals, and it is easy enough to indicate in advertisement and catalog the exact character of the consignment, so that disappointment may not be experienced. Ample market exists for fair to good bulls; the call is strong for those which tend to wards the top in their character, while the animals which would ornament the breed best in unsered condition, and usually bring the larger degree of profit if marketed for beef, should find no place in offerings to which the general public, eager in the acquisition of breeding stocks, is invited. It is indeed desirable to cull the bull offerings at sales, even when improving the blood is in such demand as at present. However great the need, we have not yet reached that point when we should breed backward by the use of inferior sires. Sale managers will have general sympathy in their protest against the incorporation of such animals in catalogs which should have wide appeal. It is no time to try to make the tops sell the tails.

PERFORMANCE A FACTOR IN IMPROVING BREEDS

Commentors on the trend of dairy cattle breeders in Britain take note of a growing disposition to give increased attention to testing for yeilds. Probably this might more properly be called keeping milk records rather than making milk record. There is a difference. We have attained astonishing results through high-pressure methods in the test barns, and are likely to hold the position of preeminence in this regard. It is rather difficult to accept the statement that breeder sof dairy cows in Britain are too conservative or indifferent to learn by the scales and fat test the exact ability of their cows. Performance breeding has a sound basis. British breeders of meat-making animals and horses have been keen to consult the verdict of the shows in choosing sires and adopting producing strains, and it is difficult to understand why the supporters of the dairy breeds should not rest their work of betterment on a basis even more certain of results—the tested capacity of their cows. The breeding game is gamble enough. Every factor obtainable should be blended judiciously in the task of producing progeny more valuable than the generation with which breeders are working.

ENCOURAGING PURCHASES FROM THE DOMINION

Indicative of the flow of trade which is in a measure reversing its currents, the directors of the American Shorthorn Breeders' Association offer to duplicate all prides won by animals of the breed in Canada that have been bred in the United States. Ownership is not a condition. Whether the enterprise of exhibitors on this side of the line carries them into the Dominion to gain a reputation and premium reward, or whether show cattle are selected in this country and added to the herds of Canadian breeders, the offer holds. It should have an encouraging effect on trade across the line. For many years we have been liberal purchasers of cattle produced by the skill of the Canadian breeder, who has availed himself largely of rich foundation material from mother-country herds, but the tide has turned somewhat, especially with the notable upbuilding of cattle breeding in the Canadian northwest. Encouragement such as the Shorthorn association extends to buyers in the Dominion is not only of physchological influence but of somewhat more tangible character.

FARM MANURES ARE THE MOST EFFECTIVE FERTILIZER, SAYS DOMINION CHEMIST

Farm manures constitute the cheapest and most effective of all forms of fertilizers, no matter what the character of the land. For increasing soil fertility this by-product of the farm stands unequalled. It may be rightly considered as one of the most valuable assets of the farm. "The more manure the more crops, the more crops the more cattle, the more cattle the more manure." This adage tells an absolutely true story. It furnishes the explanation of the fact that mixed farming is the most rational and economical system of agriculture, the one best suited to keep up the productiveness of the soil and the one under good management most likely to give the greatest profits.

The greater part of the manure applied to the land is produced in barn stable, and piggery between autumn and spring. It is the winter's manure that the farmer mainly depends on for the corn and root crops rotation. How can this manure be handled that the best possible results may be obtained from it?

First the liquid excrement (urine) must be saved. It is far richer in nitrogen and potash, two most valable fertilizing constiuents, than the solid excrement (dung), as the following data clearly show.

Composition of Solid and Liquid Extract

	Nitrogen. p.c.	Phosphoric Acid. p.c.	Potash p.c.
Horse—			
Solid	.55	.30	.40
Liquid ...	1.35	trace	1.25
Cow—			
Solid	.40	.20	.10
Liquid ...	1.00	trace	1.35
Pig—			
Solid	.55	.50	.40
Liquid ...	.40	.10	.45
Sheep—			
Solid	.75	.50	.45
Liquid ...	1.35	.05	2.10

Thus it will be seen that weight for weight, the liquid manure, except in the case of the pig, contains much higher percentages of nitrogen and potash than solid excrment. Furthermore, these elements are in an immediately available condition for crop use, which greatly enhances their value.

Averaging results we find from 40 to 45 per cent. of the total nitrogen excreted by farm animals is in the liquid portion; in the case of the cow the proportion frequently exceeds 50 per cent.

Thousands of dollar's worth of plant food lie beneath old barns and stables in the Dominion due to leaky floors and gutters. The first step towards saving the liquid manure is to see that the floor upon which the animal rests and the guttter behind are sound and liquid tight. A concrete floor and gutter solves the porblem in the most complete and satisfactory way, but if this is not practicable at present, put the plank flooring and gutter in the best possible state of repair. Litter cannot perform its function of absorbing the liquid if the floor and gutter are faulty.

Use Sufficient Litter

The second step is to use sufficient litter or bedding to take up all free liquid.

Straw is the bedding matrial almost universally used on the farm. It will absorb from two to three times its weight of liquid. If the supply is scanty—and the past season has been a poor one for straw in many districts—it will pay to cut all the straw used as litter, for finely cut it will absorb about three times as much liquid as uncut.

Dry sawdust and fine shavings can be recommended as clean and satisfactory bedding materials. Their absorpitive capacity acccording to fineness and dryness is from two to four times that of ordinary straw.

Peat moss, commonly known as moss litter (sphagnum), makes admirable bedding; it is soft and absorbent. It will absorb about ten times its own weight of liquid and possesses the further advantage of being able to retain any ammonia that may arise from the fermentation of the manure in the stable or outside.

Muck and peat when air-dried make excellent absorbents. They are being used as such to good effect on many Canadian farms. Deposits of these materials are of no uncommon occurrence in many parts of the Dominion and their value in this connection is fairly well known. Digging and piling are all that is necessary. Their use generally is supplemental to the bedding proper, being found more especially valuable in the gutter behind the cattle, and in and about the farm buildings where there might be liquid manure or drainage to absorb. This employment of muck can be strongly advised since thereby not only may a saving of much liquid plant food be effected at little cost, but the bulk and value of the resulting manure very considerably increased by the organic matter and nitrogen of this naturally-occurring fertilizer. If there is a black muck or peat deposit on your farm or available in your neighborhood, don't neglect to use it in this way.

The Application of Manure

In so far as it may be practicable the manure should be drawn daily fresh and direct, from the barn and stable to the land. For this purpose, as long as the condition of the soil permits and there is little or no snow, use the manure spreader (into which the manure from the carrier has been directly dumped) and distribute at once. This practice means not only a great economy in labor, but the prevention of losses in plant food and humus-forming materials that inevitably follow the accumulation of manure in the yard or piling in the field. It means also an equable and uniform distribution o nthe land—a matter of no small importance.

When the snow lies deep upon the ground, still draw out the manure to the fields—daily if possible—but instead of spreading pile in small heaps of 200 to 400 pounds each. Fifty heaps of 400 pounds or one hundred heaps of 200 pounds each to the acre would mean an application of 10 tons.

With the advance of spring and the disappearance of the snow, the piles of manure, now possibly elevated a foot or more on a foundation of snow, are turned over, and when free from frost, scattered.

The adivce given in this circular as to the winter application of manure is based on the results of experimental Experimental Farm, Ottawa. These experiments proved:

1. That manure left in a loose pile in the yard suffered very considerable losses, chiefly through the leaching away of soluble nitrogen and potash compounds, but partly through fermentation (heating) and consequent destruction of organic matter with its nitrogen. In the course of a few weeks these losses may amount to one- thlrd or more of the initial value of the manure.

2. That manure in large heaps or piles—whether in yard or field—heated rapidly, even in the coldest weather. In the course of three months—January to March—manure so piled lost, chiefly through excessive fementation, 60 per cent. of its original organic matter and nearly 30 per cent. of its nitrogen.

3. That heaps of 400 pounds each, put out on the fields fresh from the barn and stable (mixed manure) showed no sign of heating throughout the experiment, January to Mrach. For the greater part of the period these small heaps were frozen through and careful analysis made immediately before scattering them in the spring showed that while frozen there had been absolutely no loss, either in plant food constitutents or organic matter. —F. T. Shutt, Dominion Chemist, Experimental Farm.

BUYING MEALS AND GRAINS FOR WINTER USE

The live stock farmer who now prepares for all necessary feeds during the coming winter and spring will save money in the initial purchase, and will be sure of ample feed sfor maintaining the productiveness and health of his animals.

The requirements of an ideal ration for any farm animals are as follows: 1. Cheapness, not necssarily per ton, but in the digestible matter contained; 2. Necessary bulk; 3. Percentage of digestible nutrients; 4. Variety; 5. Suitability to the animals and to their product; 6. Palatability; 7. Laxativeness. The experienced live stock feeder needs no explanation of any of the above points. Different classes of animals and animals of different ages require different feeds due to one or a number of the above requirements being predominant.

The cheapest and best ration for live stock must be largely home grown.

This applies to tall classes of stock, but particularly to cattle, horses and sheep. Special attention is drawn to the value and cheapness of the digestible nutrients of such rich and succulent farm grown roughages as alfalfa and clover hay, ensilage and roots.

However, the buying of mill feeds is more or less necessary on many farms and must be practised with the greatest care and skill if profits are desired.

What Feeds to Choose

In the purchasing of meals and grains to balance the farm grown roughages there are but two methods of choosing. Which of these methods the farmer uses depends altogether on the quantity and variety of farm grown feeds. If there is an abundance of well cured alfalfa or clover hay, roots and silage, then the meals purchased should be selected on the basis of total digestible nutrients but with a scarcity of rich hay and the necessity of feeding coarse grass hay straw and limited or poor quality silage then meals must be selected on the basis of digestible protein. Space prevents tabulated illustrations of these points based on feeds now found on Canadian markets. However, the following statements may be easily checked by the reader to suit his local conditions, both as to available feeds and ruling prices.

Valuing standard feeds now found on our markets at the following prices per ton, namely, corn $74; gluten feed, $60; wheat shorts, $40.40; wheat bran, $35; oats, $65; barley, $72; linseed oil meal, $65; choice cottonseed meal, $65; ground elevator screenings, $45; alfalfa hay, $20; clover hay, $18; timothy hay, $20; ensilage, $3; mangels or turnips, $4; and taking from these prices 50 to 70 per cent. of the manurial value contained, such valuation being based on pre-war fertilizer prices, the following deduction may be made. The order of cheapness for total digestible nutrients per hundred pounds in these feeds is as follows: Silage, 54c.; clover hay, $1.25; alfalfa hay, $1.31; timothy hay, $1.74; roots, $2.30; bran, $2.31; shorts, $2.40; elevator screenings, $2.91; choice cottonseed meal, $3.14; gluten feed, $3.22; oilcake, $3.39, corn, $4.02; barley, $4.24; and oats, $4.29.

On the same basis the order for the cheapness of digestible protein per hundred pounds is as follows:—Alfalfa hay, $6.41; choice cottonseed, $6.64; clover hay, $8.40; linseed oil meal, $8.77; bran, $11.27; gluten, $12.03; shorts, $12.40; elevator screenings, $19.47; roots, $21.30; timothy hay, $28.25; oats, $31.15; barley, $37.46; and corn, $45.48.

The above valuations apply particularly to the feeding of cattle. Many of the above feeds are quite unsuitable for other classes of stock and the per centage of digestibility also would vary proportionately. This, however, serves as an example of the method of selection. Special attention is drawn to the value of elevator screenings in the feeding of growing pigs and to the fact that corn at present price if available ,is slightly cheaper than barley for finishing hogs.

Only standard feeds have been mentioned, but there are many compounded meals on Canadian markets which may possibly be purchased more cheaply than many of the standard meals or grains, both as to price per ton or price per hundred pounds or digestible protein or total digestible nutrients.—E. S. Archibald, Dominion Animal Husbandman.

THE VALUE OF LITTLE REPAIRS

Too often in passing along the country roads in springtime there is to be seen the farm homestead emerging from winter snow in all to dilapidated a condition. Its forsaken, wrecked appearance gives away, somewhat, the character of the people who live there, just the class of farmer who argues that tidiness, brightness, and ornamentation do not count as so many dollars and cents. This too practical a principle in life causes many to miss much of the real happiness and contentment that is to be found in it. Nearly every farmer has a tendency to neglect those phases of farm life whose returns are not counted in so many dollars.

'A Stitch in Time Saves Nine'

The upkeep of farm buildings, seems on the surface, farm expenses, but it is really farm income, if they are always repaired immediately a damage or breakage occurs. There is the old proverb, "a stitch in time saves nine," and its practical lesson is nowhere better seen than in the timely repair around the farm. The best coworker with the stitch-in-time practice is a little forethought in winter, to place everything where it belongs. The snow has a faculty of covering up and hiding all unsavory things in its mantle of purity, but when springtime comes and lifts the veil, oh my! tin cans, old shoes, and chickens' feet decorate the home surroundings.

Every farmer who knows that wholesome surroundings make happier and more efficient lives insists that everyone about the place abandon the practice of throwing rubbish about the yard. Winter conditions hide what is going on in the way of getting rid of refuse, and spring-tide day calls for other duties. The rubbish heaps have again to be tackled and lifted anew, to be removed from sight, and it is so much time wasted that could be well conserved in anticipating what happens every time the snow leaves the landscape. That which cannot be burned in the furnace or stove should be placed in some receptacle and taken away in sleigh or wagon. The habit of having everything from smashed crockery to the anatomic remains of a faithful wheelbarrow or buggy, disfiguring the premises, should be discouraged. The accumulation of manure, rotting straw and similar refuse is a menace to health when the warm days come and become breeding places for flies and disease.

The Loose Board and Broken Window.

Dilapidated buildings not only give a farm a bad appearance, but they reduce its value to a very large extent. There is every sympathy with farmers in these days in their struggle with decreasing hired help, but there are many items of detail in looking after the farm house, barns and buildings, that do not cost much money or time, if done in time, that greatly enhances the value of the farm. A broken window, a loose board, a door hanging by one hinge, and a shingle or two off the roof, are viewed as insignificant consequence to the value or utility of the farm, but when they are allowed to remain in that condition, the destroying agency of neglect will in a few years demand a new barn for further exercise in destructive sport.

To fix these slight damages, just at the time they are first seen is a comparatively easy matter and the farmer is a richer man if he does it. Every additional fixture makes the farm

(Continued on page 668,

HORTICULTURE

PROTECTING POTATOES FROM INJURIOUS INSECTS AND FUNGOUS DISEASES

The leaves of the potato vine must be kept intact and in a thrifty condition if a maximum crop is to be obtained, and both insects and diseases should and can be fought and conquered if the well-known and thoroughly tested preventatives and remedies are used.

Spraying for the Colorado potato beetle should not be delayed until the vines are badly injured, but preparation should be made to spray as soon as the larvae or young bugs hatch. In about a week after the eggs are laid the young beetles or larvae appear and begin to devour the foliage with a rapidity which is only too well known. The last brood of larvae, which disappear into the soil before severe frost, pupate there, remaining in the ground in the form of perfect insects until the following spring. Fortunately, there are good remedies for this insect in Paris green, arsenate of lead, and other insecticides. The importance of preserving the foliage as nearly intact as possible has already been impressed on our readers. It is well known that the loss in a crop where the vines have been allowed to be devoured by potato beetles is enormous, the crop sometimes being scarcely worth digging. The longer the spraying is delayed the greater loss there will be. If cheap help can be obtained it will be advisable to spray the vines when they are quite small, or pick off the old beetles before they have deposited their eggs, but if help is scarce it may not be possible to do this, and the temptation to leave the old "bugs" alone is great, as they do little injury to the foliage. Unfortunately, on perhaps the majority of farms, nothing is done to destroy the potato beetles until the foliage is noticed partly eaten. This is too late. By the time the poiso ntakes effect the vines are badly injured and the future crop much lessened.

Potato growers should not wait until the vines are injured, but should be on the lookout for the young "bugs," and as soon as they appear an application of some good insecticide should be made. As the eggs are not all laid at the same time, the larvae do not hatch all at the same time, and it is usually necessary to spray several times before they are all killed. As it is important to kill the beetles as soon as possible, an insecticide which will act quickly is desirable, and also one that will adhere to the foliage. Paris green and arsenate of lead are two of the best poisons to use. Paris green should be applied in the proportion of 8 ounces or more Paris green to 40 gallons of water, with about 4 ounces of lime to neutralize the effect of free arsenic on the foliage. Four ounces of Paris green to 40 gallons of water will kill the insects, but does not act as quickly as eight ounces. If applied dry, a good proportion is 1 pound Paris green to 50 pounds slaked lime, land plaster or any perfectly dry powder. The dry mixture should be applied when the vines are wet, so that it will adhere better. There are strong advocates for both the wet and the dry mixtures. Wet mixtures may be put on at any time when the weather is fine, but if the best results are to be obtained dry mixtures should be applid only when the dew is on the foliage. If the dry mixtures should be applied only is moist it will adhere better than the wet mixture and will also be more evenly distributed. Arsenate of lead paste used in the proportion of two to three pounds to forty gallons of water, or powdered arsenate of lead at the rate of 1 to 1½ pounds adheres better to the foliage than Paris green, and is a good poison to use. It does not appear to kill quite so rapidly as Paris green, and a mixture is recommended of 8 ounces Paris green and 1½ pounds of paste arsenate of lead to 40 gallons of water. "Bug Death" dry and also in the proportion of 1 pound to 2 gallons of water, has been found a good insecticide, but is more expensive than Paris green.

The cucumber flea-beetle frequently does much harm to the potato crop, and being so small, is often not seen, but the results of its depredations will be found in the many small holes which may be noticed in the leaves and in the lessening of the crop on this account. Spraying with Bordeaux mixture and arsenate of lead will control this.

It is found that the parts of the leaves which are injured by the flea-beetle make suitable lodging places and points for germination of the spores of the early, and possibly, late blight. We believe that keeping vines covered with Bordeaux mixture and Paris green is the best preventative in this case.

The Early Blight or Leaf Spot Disease and the Late Blight or Rot.

Although much of the premature killing of potato vines is due to the early blight, which is frequently mistaken for the late blight, the latter is by far the more serious disease, as it spreads with much greater rapidity and in addition to the killing of the crops causes the rotting of the tubers.

The late blight usually appears between the middle of July and the first of August, though sometimes earlier or later, depending on the season and part of Canada. The strong and disagreeable odour from a potato field where the late blight is at work is familiar to all, and although it is too late to get the best results after the disease has begun to spread rapidly, it may sometimes be checked by thorough spraying at that time. The loss from blight is usually greatest from the main crop or late varieties, as the early potatoes are usually well advanced before the conditions are the most favourable for the rapid development of the disease. The weather which appears to favour the spread of the late blight, is what is usually known as "muggy," or close days with much moisture in the air. With these conditions myriads of spores germinate, and the disease spreads through the tissues of the leaves and destroys them with great rapidity. The object of spraying is to protect the leaves with the Bordeaux mixture so that if the spores germinate they are killed by it.

In a three-year experiment conducted at the Central Experimental Farm in controlling late blight there was an average difference of 94 bushels per acre of marketable potatoes in favour of the sprayed. The importance of keeping the plants growing and the tops uninjured by insects and disease was well brought out in an experiment in Vermont where it was shown that there was an increase of 119 bushels per acre during the month of September when the tops remained green and uninjured.

The cost of spraying with Bordeaux mixture is not large compared with the great average increase in yield and value of the crop from the use of it. Some years the results may not be marked but it is the average results which should be considered. A good spraying machine is important.

Formulae Recommended.

Bordeaux Mixture.—For Early and Late Blight and for Flea Beetles:—
Copper sulphate (bluestone) 4 to 6 lbs.
Unslaked lime.....4 lbs.
Water (1 barrel).....40 gallons

Dissolve the copper sulphate by suspending it in a wooden or earthen vessel containing four or more gallons of water. It will dissolve more quickly water. It will dissolve more quickly in warm water than in cold. Slake the lime in another vessel. If the lime, when slaked, is lumpy or granular, it should be strained through coarse sacking or a fine sieve. Pour the copper sulphate solution into a barrel, or it may be dissolved in this in the first place; half fill the barrel with water, add the slaked lime, fill the barrel with water and stir thoroughly. It is then ready for use. It is important not to mix the lime water and the sulphate of copper solution before diluting.

A stock solution of copper sulphate and lime wash may be prepared and kept in separate covered barrels throughout the spraying season. The quantities of copper sulphate, lime and water should be carefully noted.

IF YOU FEED YOUR TREES PROPERLY THEY'LL FEED YOU

No subject is of greater importance for the orchardist to study than maintaining the proper vigor of his trees. The successful orchardist knows, first, the desirable vigor for the tree at a given age, and second, how to fashion his pruning, tillage and intercropping to produce this desirable vigor.

There is seemingly a battle raging in plants between the nitrates and the carbohydrates—that is, between nitrogen and sugar and starch. If either one strongly prevails in the bearing tree, results are not profitable to orchardists; when they are in a balance, the results are profitable Some recent work done by Doctor E. J. Kraus, of the Oregon Experiment Station, assisted by Doctor H. R. Kraybill, recently of the agricultural chemistry department of the Pennsylvania State Collee, at the University of Chicago is interesting. This work is published as the Oregon Experiment Station Bulletin No. 149 and is entitled Vegetation and Reproduction with Special Reference to the Tomato.

Greenhouse tomatoes were used in the experiments, soils of known consistency were employed, and the plants were fed nitrogen in the form or nitrate of soda or nitrate of calcium. It was readily seen that the plants could all be grouped into three classes. First, those that were very vigorous but which had relatively few blooms and produced very few tomatoes; second, the group of plants which made desirable vegetative growth, had a large number of blooms and produced very heavily; third, the group which made very little vegetative growth, and had an enormous amount of bloom, but strangely set very few fruits.

A chemical analysis was made of these three groups and it was found that in the first group there was an excess of nitrates; that in the second group there existed a certain mathematical relation or balance, so to speak, between the nitrates on the one hand, and the carbohydrates—that is, sugar and starch—on the other hand; that in the third group a large amount of carbohydrates and a very small portion of nitrates were found.

How the Tree Works

Similar work was done by others with wheat and corresponding results were obtained. These men have shown that to get certain desirable growth and heavy fruiting, a mathematical ratio between nitrate and carbohydrate must exist. This work has great significance and seemingly a very broad application to the problems of the orchardist.

There are two distinct operations at work in the tree. Water is taken up from the roots of the trees to the leaves, which take carbon from the atmosphere and in the presence of sunlight manufacture starch and sugar, which is the basis of fruit production. The roots also furnish water, minerals and nitrogen, the great growth producers. These two—the carbohydrate manufactured by the leaves and the nitrates taken in through the roots—produce fruit and growth. If we prune back the top of the tree heavily, we reduce the supply of the stored sugar and starch and get as a substitute vigorous sappy wood, rich in nitrate but low in sugar and starch, thus pro-

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ducing wood and little or no fruit.

Should we root prune, we reduce the intake of nitrates and increase the relative amount of carbohydrate and get more fruit. Root pruning, however, is more or less dangerous, and there are other ways to bring about these same results. The amount of nitrates the trees need can be influenced by tillage, irrigation, fertilizing, pruning and growing of cover crops. and so on. In a way the nitrates and carbohydrates in a tree work like the spark and feed in an automobile; nitrate is the spark of life. Too little or too much spark and not the right amount of gas means a spitting, choking, or perhaps a dead engine.

Let us see how this relation between nitrates and carbohydrates is to be applied to the trees. The first five or six years of a tree's life are the formative period. We want vigorous growth. To produce this, early and thorough tillage is very desirable. The sap that rushes up in the spring contains much raw food—that is, nitrates—and during this rapid flow of sap, before the leaves are fully expanded, the trees are making their greatest terminal growth. Later, as the leaves expand they begin the manufacture of elaborated food or sugar and starch, and the trees cease making terminal growth, the development taking the direction of increased diameter of branches and the formation of buds and spurs, the true results of the leaves' work.

By the middle of the summer the trees have made sufficient terminal growth and intensified tilalge should be discontinued, thus giving the trees an opportunity to harden for the winter and devote their energies to the manufacture of food. Early intensive tillage then encourages terminal growth, while early ceasing of tillage encourages food storage and hardening. If young trees are intercropped, hoed crops are preferable, as these require the same type of tillage as is desirable for the trees. In pruning we practice heavy cutting, as this gives us the desirable wood growth, allowing us to build a desirable framework and to force our laterals where they are needed.

By the time the trees are from six to eight years old we are looking for some financial returns. In many cases, however, we will be greatly disappointed unless we practice a number of radical changes in our orchard management, for the practices which have been so far successful with the young trees will fail to produce what we most earnestly desire—more fruit. We have by former practices built up a strong framework. If we wish now for this framework to become productive, tillage must become much less intensive(and pruning back should be discontinued for a few years, because such practices are conducive to the formation of wood rich in nitrates and will discourage the formations of elaborated food which will give us buds and spurs, the forerunners of fruit.

To get the desired development we must greatly reduce the tillage, and if the trees are extremely vigorous, perhaps discontinue the tillage for a year entirely, or even go to the extreme of growing a grain crop for a year, thus thoroughly checking the trees. This practice will not injure vigorous trees, but will generally make them produce without impairing their vitality.

After the trees come into heavy bearing everything seems to go well for a few years. The trees make a desirable wood growth and produce large crops of fine fruit, but gradually a change comes over the orchard. The fruit instead of being large, bright colored, angular, oblong and crowned, becomes round to flat, smooth and dull, though perhaps deep colored. The percentage of culls greatly increases, the trees bloom well but set poorly, the leaves become thin and yellow and very little new wood develops.

Many functional and physiological troubles appeal, such as core rot, bitter pit. apple rosette, little leaf or dieback. Why this change? The organic matter has been burned out of the soil; moisture and, above all, nitrogen are lacking. The wood of such trees probably is well supplied with sugar and starch, but the vital element, nitrogen, is found in very small quantities.

The remedy? Get nitrogen back. But how? There are many ways and every grower can surely fine one suited to his conditions. Perhaps the quickest way is to give the trees five pounds of nitrate each. If plenty of moisture is present, sow the dry crystals broadcast; if moisture is lacking, spray it on the trees, putting it into the lime-sulphur spray- -one pound of nitrate to every gallon of spray, and use five gallons of spray to the tree. Give the trees this nitrate at least a month before blossoming.

Greatly Increased Yields

With such treatment we have secured marked results on some of the light soils in our Western fruit districts. The results at times have been fairly startling. The percentage of set has increased by thirty-eight at the time of the June drop, and seventeen per cent at harvest time.

Yields, which in some cases had formerly been a bushel or less to the tree, have increased to where the trees bear from ten to even as high as twenty-ine bushels to the tree. The wood growth has been greatly stimulated, the fruit has increased in size.

In other words, the trees have changed from a devitalized, unproductive condition to a condition of normal vigor and high productivity, and become profitable commercial producers. Nitrogen, of course, may be supplied in many ways, and these same results may be secured, though probably more slowly. It would be well to supplement the use of nitrates and perhaps in some cases, if one so desired, to substitute other methods, even though they be much slower. For example, under most irrigated conditions, manures, cover crops and heavy mulching would be desirable, and under unirrigated conditions, where the moisture supply is ample, the growing of shade crops—that is, the seeding down of the orchards to more or less permanent crops, such as alfalfa, clover or vetch—would be very desirable.

In those irrigated sections where the supply of water is somewhat limited, the basin mulch system has much merit. In this system large checks are built and these are filled in with nitrogenous straws, such as alfalfa, clover, vetch and bean.

We must prune moderately but regularly. Only thus can we obtain new fruiting wood and revitalize old spurs all over the trees. Often by removing a considerable portion of the weak bearing wood we can force the food and sap into the remaining surrounding buds and spurs and greatly invigorate them. Light thinning, spread over the trees, is the type of pruning most desirable.

Some heading-in may be practiced to advantage; but moderate heading and moderate thinning are generally more desirable than extremely heavy heading or extremely heavy thinning.

We can effect and then control, to a very large extent, the vigor of our trees by the proper correlation of such various orchard practices as pruning, tillage, and fertilizing, and to be really successful and realize the best results from our orchards we must study when and how to combine these practices to bring about what we all do greatly desire—an orchard in which the trees are balanced, are producing plenty of fruit and wood and are making us mone.—C. I. Lewis in Country Gentleman.

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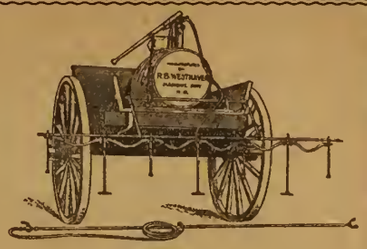

Even when no blight appears spraying keeps the vines green 2 to 4 weeks longer than when not sprayed.

This will produce generally 25 per cent. more crop.

PERFECT SPRAY PUMPS

ARE MANUFACTURED BY

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PREPARE FOR NEXT YEAR'S SHORTAGE OF GARDEN SEEDS

While rigid selection from year to year is necessary for most kinds of vegetables when grown for seed; and while to keep them pure the different varieties have to be grown some distance apart, yet most of the seed grown in the home garden is likely to give almost or quite as satisfactory results or oven better than that which is bought, and, as some seed may be difficult to obtain next year, it is recommended for each person who has a garden to let a few plants or specimens ripen, from which seed can be saved.

It is better to mark the best plants and save the seed from them rather than to save the seed which remain after the plants have been cropped.

From experience at the Experimental Farm, Ottawa, the following minimum number of feet, plants or specimens to be saved is suggested as being sufficient to supply enough seed for the home garden in 1919; Beans, 5 ft.; corn, 1 ear; cucumbers, 1; Lettuce, 3 plants; melons, 1; peas, 5 ft.; radishes, 3 plants; spinach, 3 plants; squash, 1; tomatoes, 3.

Either reserve a few feet of the row of beans, or, better still, mark a few productive plants free from disease.

The seed stalks of lettuce are thrown up after the heads are full grown. The seed ripens rather unevenly, and, in order not to lose any of it, each head should be picked over as it shows white, it being necessary to go over the plants every few days. The plants can, however, be pulled and hung up to dry.

If some radishes are left unpulled. after being ready for use, they will soon throw up stalks, and good seed will develop. For best results the plants should be at least six inches apart.

In saving home-grown seeds, it is important to dry them as soon as possible after they are ripe, then clean them, and keep them dry until needed the foll wing spring.

Peas and beans will soon be spoiled for seed if they do not dry rapidly in the pod after being harvested.

As corn sometimes has to be pulled before it is quite hard, it is desirable to see that there is a good circulation of air around each ear. A good plan is to husk the ears and then stick each one separately on nails driven into a board and far enough apart so that the ears will not touch.

The seed of tomatoes for home use should be saved from the plant bearing the largest crop of early and best fruit. Where a quantity of seed is saved, the tomatoes may be cut in half and the pulp pressed out into some vessel, adding about one-third its volume of water. Put in a dark room until fermentation sets in, which will be in about two days, when the seed will separate readily from the pulp. Wash out and dry where the sun does not shine on it.

Following are the quantities of seed which one might expect; beans, 1 or more oz. per plant; corn, 300 to 600 kernels per ear; cucumbers, ⅛ to ¼ oz. per specimen; lettuce, ¼ oz. per plant; muskmelon, 1 to 1½ oz. per specimen; onion, ⅛ oz. per plant, pea, 4 oz. per 3 ft. or row; pepper, 1-16 to ⅛ oz. per specimen; radish, 1 oz. per plant; spinach, 1¾ oz. per plant; squash ,small seeded, 2½ oz. each; squash; large seeded, 3 oz. each; tomato, 50 to 300 each; watermelon, 2 to 3 oz. each.

DAIRYING.

EFFECT OF TUBERCULIN TEST ON MILK YIELD

Many dairymen would test their cows for their own information, if for no other reason, were they certain it would not reduce the milk flow. There need be no hesitancy. Experience shows that when the cows are tested under natural conditions the milk flow is not materially affected. When the cow is taken away from her mates, put into a hot, badly ventilated stable and tested, she usually does decrease in milk production, but it is due to the treatment and not the test.

So many fine herds have been ruined by tuberculosis that the value of the test should be emphasized. In an eastern state last winter I saw a cow stabel that contained 100 cows, but only 54 were pronounced healthy after the test. It was the same old story. A diseased cow had been brought into the herd and she had spread it to all the cows in her line, in this instance through the long water trough in front of the stalls.

A man may shut his eyes and refuse to use the test on his herd. In untested herds the disease may be spreading like wild fire and the owner blissfully unconscious of it until some day when he tries to sell an animal to go out of the state and is required to show a clean bill of health. Then he must have the animal tested. Probably it reacts. Then this man wakes up, tests his whole herd anad is chagrined to find tuberculosis all through his herd.

Every herd should be tested once a year, and some recommend semi-annual tests. It is well to know what is going on in the herd, even if the information is used solely for one's own guidance. T hetest will find the diseased cows, but a general examination will not detect tuberculosis.

In order to determine whether the tuberculin test really reduces the milk flow, we tabulated the milk produced by 10 cows before and after the test was made on the Kentucky Experiment Station herd last February. The 10 cows were giving on an average 21.45 pounds of milk daily for 3 days preceding and succeeding the tuberculin test and on the two days of test they average 20.98 pounds. There was an inappreciable decrease of 2.24 per cent. on the two days when they were tested. No one need have any fear of unfortunate effects from the test.—J. J. Hooper, Kentucky Experiment Station.

FEEDING BREEDING FEMALES

Proper feeding has much to do with issuring the full gestation period, and a normal birth of healthy, vigorous offspring. The use of good roughages, such as alfalfa aind clover hay, solves the problem excpet where trouble is caused by contagion. These facts have been fully proved by a series of experiments covering the past ten years at the Wisconsin Experiment Station, where Prof. E. B. Hart and his associates fed cows a variety of balanaced rations from calfhood to maturity and ou through several gestation periods. The first principle they discovered is that a balance between protein and energy in thefeed is not sufficient. Abundant mineral matter is necessary. Some feeds contain unknown injurious substances, whose evil effects are only counter-balanced by a suitable variety in the ration.

Even with a good roughage it was found that wheat or its by-products should not be fed continuously too liberally, or the offspring would be weak. Injurious effects were produced especially by feeding the embryo of the wheat kernel. Poor roughages, such as straw, tended to cause early delivery of offspring and failure of the cow properly to clean, with the consequent liability to starting infection. The low mineral content seemed to be the cause of injury from feeding too exclusively on straw for roughage. The experimenters significantly comment that "the condition of the straw stack herd, without reference to what the calves may be, is direct evidence of poor nutrition." Cows fed entirely on wheat products and straw, or on oat products and straw, always produced either weak or dead calves or abortions. Those fed on these rations with half of the straw replaced by alfalfa hay produced strong calves. Those fed on corn products and husked cornfodder also produced normally.

Dairymen especially should apply these teachings. While it is well known that contagious abortion is common in dairy districts, it is important for breeders to recognize the fact that it is possible to produce dead or weak premature calves from the improper selection of feeds. Contagion is doubtless blamed for much damage which it does not cause. Heavy-milking cows frequently secrete more mineral matter in thei rmilk than is supplied by their feeed. The evils of poor nutrition are added to those of contagion and the disaster is increased. On the other hand, sufficient mineral nutrition may be expected to check the damage done by infection. This phase of the problem is not covered by the Wisconsin tests but logically presents itself for thoughtful consideration, because it is known that some cows naturally possess and others acquire a degree of immunity to infection. Proper feeding may help.

THE DAIRY SITUATION IN THE UNITED STATES

Following is the text of the report and recommendations insofar as dairy products are concerned, of the advisory committee of agricultural and live stock producers, consisting of 23 members from all parts of the United States, who were in consultation in Washington for a week with the Department of Agriculture and the Food Administration:

The dairy situation in this country is such that we believe that special efforts should be made to secure a more ilberal use of milk and its products for the coming summer. The blocking up of exports of condensed milk and other dairy products caused, we understand, in part by the reduction in overseas transportation, together with the public agitation during the winter relative to the price of city milk supplies, is leading to an accumulation of stocks in excess of present demands.

It is of the utmost importance to the public welfare that there be a steady maintenance in production, and when one considers that dairying enables the maximum percentage of rough forage and feeding stuffs that have but little human food value except as used through live stock to be converted into readily available human food, it is essential that such industries be not only conserved but stimulated. If this is done, conservation must see that complete utilization of products follows.

Recommendations

We recommend, therefore, as follows:

1. The Food Administration should give the wide publicity to its present policy of recommending the liberal use of milk in order to correct any misunderstanding which still lingers in the minds of people that this food product, which is so rich in growth-promoting qualities and so essential to well-being, especially of the young, should be curtailed ii use.

3. We cordially approve the educational and demonstrational work which the Department of Agriculture is now inaugrating in the utilization of skim-milk and butter-milk as human food instead of stick feed, and believe that such work, if rapidly extended this season, will be instrumental in utilizinp large quantities of highly nutritious food products.

4. We recommend that efforts be made to secure the adopaion of such additional stable dairy products as cheese in the Army and Navy rations, as this is conentrated, highly nutritious food product, capable of transportation with the minimum use of cargo space.

Stabilized Prices for Products

5. The fundamental importance of flid milk in human nutrition makes it imperative that this essential food supply be furnished to the consumer at stabilized prices based upon the cost of production and distribution with a fair return to producer, distributor, or manufacturer. We heartily approve of the creation of the regional milk commissions established by the Food Administration to determine the cost of producing and distributing milk in its various forms, coupled with a reasonable return to the parties producing or handling the same, in the territories where controversies between the parties could not be adjusted through conferences conducted by the representatives of the various interests engaged in the milk industry and the Food Administration. We suggest that such regional bodies be established in any other territories where controversies betweeen milk producers and purchasers of milk or cream can noe be adjusted upon like principles by the Food Administration through heditation. We recommend that special consideration be given to the problems involved in the more economical methods of milk distribution as well as production, with the view that this necessary food be supplied to the public at the lowest possible price consistent with a return of cost and a reasonable profit to those engaged in the industry.

6. While we recognize that there is a general shortage of fats which may make it necessary to conserve supplies of this essential character, it is evident that there is a possibility of expanding much more readily the production of vegetable than such animal fats as dairy products. With the overseas transportation in such condition as to curtail seriously export trade, and the likelihood that thisi summer season is going to see a marked surplus in dairy products, we believe that it should be the policy of the Food Administration to recommend the wise but more liberal use of butter, cheese, condensed milk, and ice cream, with the ultimate view in mind that the supply of dairy products be maintained anad the industry not unuly suffer from overproduction and consequent demoralization this summer. By so ding the industry will be in position to meet the inevitable demand from the allies when shipping facilities become improved in the fall. When we recognize how greatly reduced the milk resources of Britain and France are, where such a large percentage of dairy animals have had to be sacrificed, it is imperative that we protect the last remaining milk reserve of the belligerent nations.

BEST TO HAVE A DAIRY COW FRESHEN AT TWO YEARS

"The age at which a heifer should freshen has been a subject of great interest to me for fully a quarter of a century," said E. A. Powell, in a recent

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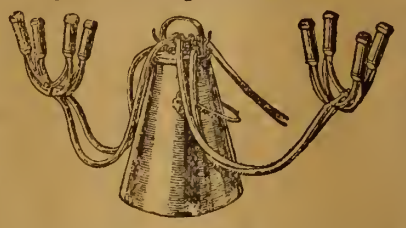

To be successful a milking machine *must* have a perfectly acting pulsator to cause the alternating action of suction and massage on the teats (to imitate the calf's "suck and squeeze") to occur with absolute regularity; and to make the change from suction to massage and back again instantaneous.

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adress. "I have given it much thought and have arrived at the conclusion, after having carefully watched the results in hundreds of instances, that the best method is to grow the heifer well from birth, without too much flesh, but kept growing continually, have her freshen at about two years, milk her continually through, or nearly through the first year, to establish the habit of holding out, then give her a rest of two or three months with liberal feed and good care before her second freshening period.

"By this means the dairy form and milk organs are developed at a young age, when the whole system is most susceptible to the conditions of motherhood, to environment, and every influence which will have a bearing on the future development of the animal.

"By this means better dairy form, better developed milk organs are assured.

"Nearly a year in time and one calf are saved, which is no small item at the present price of milk and the value of a good calf. On the average I am confident better future cows are assured by this method.

"The coarseness and steery appearance, which is too common among heifers that are barren until three years of age, is avoided. The dairy tendency in a cow is, in a marked degree, the result of development. The young animal responds more readily to all the influences which have to do with her development than the older one. The heifer that does not breed until about three years of age is likely to develop into a coarse, steery, beefy animal, which should, if possible, be avoided. She may develop a little more size, but I do not look upon that as an advantage. The Holstein-Friesians if given a fair opportunity when are usually large enough. In fact, many of the cows of this breed are too large to be profitable and are undesirable for the average dairyman whose cows have to rustle for their living during the summer season. Extremely large cows are vry liable to become footsore and lame while grazing, especially over our hilly land, and are therefore not profitable. It is probable that a very large cow, with an abundance of feed carried to her and with water continuously at hand, consuming a large amount of feed and without any effort on her own part, may make a larger record at a much greater expense, but such a cow is not as profitable or as practicable for the ordinary farmer or dairyman. Cows that will weigh from 1,300 to 1,500 lbs. are as large as I prefer, although many of mine are of still larger size.

"By referring to the early records made by cows of the Holstein-Friesian breed, I find that nearly all the world's records, during the early introduction of the breed in this country, were made by cows which had their first calves at about two years of age. The first two-year-old tot give 13,500 lbs. of milk in a year, the first three-year-old to give 16,467lbs. milked twice a day without grain, the first four-year-old to give over 20,000 lbs., the first and only two-year-old to give 18,484 lbs., the first heifer to make 21½ lbs. butter in 7 days and 80 lbs. in 30 days, the first cow to give over 16,000 lbs. milk in a year, the first cow to give 26,000 lbs., all had their first calves from 23 to 26 months of age.

"The only entire herd of 32 two-year-olds to give an average of 12,666 lbs. as two-year-olds had their calves as juniors, and most of them at about two years of age. These instances might be multiplied indefinitely, but I am well satisfied that the method suggested above will give the largest profits and the best results, as well as the best type of dairy cows."

HOT WEATHER SUGGESTIONS ON THE CARE OF MILK

It is one of the anomalies of life that the sources of our greatest pleasures and greatest means of good may also be sources of life's greatest pains and most harm. Milk is a case in point. Milk is the best source of life's greatest need—proper and sufficient food. It may also be a cause of the destruction of life, because it may become the home or feeding ground of those death-dealing organisms which are now recognized as the cause of practically all deaths, except those due to accident or old age.

Fortunately we have discovered comparatively simple methods of combating th eeffects of what are called pathogenic (disease-producing) bacteria. These may be stated in a few short rules as follows:

1. Milk which is consumed in a raw condition must be drawn only from cows which are healthy. Milk given from cows which are sick, which are not "good-doers," and especially milk from cows with a cough, must be pasteurized.

2. As soon as the milk is drawn from the cow is should be cooled to 50 degrees F. or lower, and be kept at that temperature until consumed. This makes an unfavorable condition for the germs to grow in.

3. All pails, strainers, dippers, milk bottles, pitchers, etc., which come in contact with the milk, must be thoroughly washed and preferably steamed, or be rinsed after washing in a chloride solution, which has been found to be one of the best germicides.

4. Milk should not be exposed to the air any longer than absolutely necessary, as this seeds the milk with a fresh lot of germs. This means the keeping of milk in a closed vessel and not in an open dish.

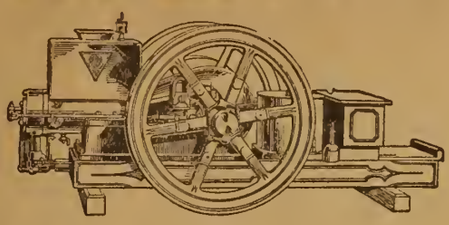
5. "Left-over" milk from meals should not be put into the general supply, as this causes the whole lot to spoil.

6. "Left-over" milk from the sick room should be pasteurized or destroyed, as it may spread disease.

7. Milk at all times and in all places should be kept CLEAN and COOL.

DOES THUNDER SOUR MILK?

There is widespread belief that thunder sours milk for testimony is not lacking that after a severe electrical storm, milk that should have been sweet is found to have soured. It is quite natural that the souring should be attributed to the thunder, but we shall need to look elsewhere for the cause of this phenomenon. Souring is caused normally by the acidity which results from bacterial growth and sterilized milk will not sour in a thunder storm. Neither will milk that is kept on ice sour during a thunder storm. The probable explanation lies in the fact that during storms of this kind the temperature is raised sufficiently to favor the multiplication of milk-souring bacteria where the temperature is not regulated by the use of ice. W. M. F.



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LIVE STOCK.

LIVE STOCK OUTLOOK AND THE GREAT OPPORTUNITIES IT OFFERS CANADIAN FARMERS

Everywhere the question is asked: What is the outlook for the live stock farmer? The very fact that the question is so frequently asked and so much discussed is best evidence that the production of live stock is one of the most expensive and one of the most hazardous forms of farming. For example, it takes two or three years to produce and prepare an animal of the cattle kind for market. During this time it is consuming a very large amount of feed which represents a large investment in land, money and labor. In the meantime almost anything may have happened in the market and the enterprise may result in posltive loss to the farmer, even though he is producing the standard food the world must have. It is therefore perfectly natural and inevitable that the live stock farmer should look carefully about him and as far into the future as possible, especially in this time of disturbance.

It is next to impossible for us to realize that actual starvation has probably destroyed more people during this war than have been killed by bullets or died by disease, and yet such is unquestionably the fact. One-third of the population of Europe is determined to overrun the continent and ultimately the world, and it has pushed the struggle so far as to threaten not only its own existence but that of Europe as a whole. Russia is said to have drawn out of civil life no less than twenty millions of men, and in France every fifth person, including babies in arms, is now engaged in war. Clearly it is impossible to withdraw so large a proportion of our people from production and turn their lives and energies to destruction without ultimately paying the debt in reduced supplies, particularly of food.

At first thought this would seem to argue unquestionably for an unlimited increase in live stock production, but such a hasty conclusion is not warranted, because of the fact that animal food is, roughly speaking, eight to ten times as expensive as is vegetable food. That is to say, one thousand bushels of corn, for example, if consumed directly will sustain approximately ten times as many people as it could sustain if fed to animals and the animals consumed food. Of course it is true that the grass and other forage which animals eat are unsuited for human food, and yet the fact remains that in general the people can afford animal food in large quantities only when the population is scarce and land and labor are plenty. For example, China has reached a state in population where any considerable production of animal food is impossible and therefore the people must maintain themselves directly upon vegetable growth.

The time is doubtless here when America and her allies must somewhat reduce the luxury of animal food as it must reduce it luxuries of all kinds. In plain terms, we cannot afford to raise so many crops as heretofore for the feeding of animals, but must consume a larger proportion of the crops ourselves.

This all means that we must either reduce the number of our animals or reduce the expense of maintenance. As between the two it is wiser in every way to maintain numbers as far as possible, and make every saving within our power by reducing the cost of maintenance. For example, it is wiser to send our beef cattle to the markets in a less highly finished condition than it is to feed our crops to a reduced number of animals for the sake of maintaining the old-time excessive fat, most of which will not be consumed. It is wiser to somewhat reduce the production of milk by less intensive feeding methods than it is to reduce our numbers and go on feeding to the limit of consumption those mill products and other commercial feeds that are now almost cut in the middle as to amount and which have doubled in value due to disturbed market conditions.

In this connection we must remember that the great question now is not what will pay the farmer best, but what will serve us and our allies best in time of war when the nation is fighting for its life. Under these conditions the question is not how the farmer can make the most money, but how can he keep his farm at all. He knows well that if the Germans win, he will be taxed as he was never taxed before to pay the German war debt.

After the War, What?

It would be a bold prophet who would attempt to answer this question. There is no doubf but that the live stock interests of our allies across the water have suffered deproably. Neitheris there any doubt but that they will recoup themselves from herds here if we have the material to spare, and if they can find money for it spurchase. Indeed, commissions are already studying this prospect over here with a view to early importations at the close of hostilities. If the war should end soon and if we as breeders can be wise, there is no doubt in the opinion of the writer that large importations will be made by all the countries now at war, and at prices as generous as we are in honor bound to ask. If, on the other hand, a ten-year war is ahead of us, it spells exhaustion to everybody, and it might be that the nations of Europe would enter into a period of depression such as would make it impossible for them to carry out their present plans.

However, the chances would seem to be vastly in favor of tbe assumption that there will be a movement of our animals across the water even if we must arrange the credit to facilitate the transfer, and I am one who believes that the very best service which the live stock breeder today can render his country, his allies and himself, is to so manage his breeding operations as to have on hand a considerable quantity of useful breeding stock ready for sale as soon as the war is over. If this is to be done, however, the greatest care must be exercised both in the handling of the breeding problem and in the maintenance of the animals. It will not do, in the face of the present scarcity and prospective greater scarcity, to go on shovelling grain into our breeding animals without restriction as we have done in the past.

The times indicate that our breeding herds should be maintained in a less highly finished condition, and our breeders should, dufing the period of the war, cut out those classes which require a wasteage of feed for finishing. The times indicate, too, that old inferior animals should be radically eliminated, and a large herd kept in a young, growing, and prosperous condition. Such a herd can be maintained at a minimum of cost, can be quickly increased as occasion demands, and should carry no dead timber. The burden of its maintenanace is reduced to the minimum.

All these are problems which require the careful consideration of the livestock men who would best serve their country at a time like the present.

Address by E. Devenport, U. S. Food Administration, given before Wisconsin Live Stock Breeders' Association Conference.

LONG LEGS WITH MORE MEAT

In offering suggestions to a young farmer who aspires to become a breeder of bi-type hogs, a successful breeder pointed out as a fundamental characteristic the long legs of the little pigs produced by his own big sows. The man who makes his foundation selections at showring or sale from thick-fleshed mature animals may readily overlook the relation of parts which indicates probably development of growing pigs. As with calves and colts, the legs of a pig grow less than the body. If they do not have considerable length at birth a short-legged medium or small-type hog is the outcome. A big-type hog is big all over, legs included.

Big-type pigs appear longer-legged than they are. They grow so fast that they put on less fat than pigs of smaller frame. A half-inch more of fat on any pig's back and on its belly would make its legs look relatively one inch shorter. Thus the legs of the big-type pigs are both absolutely and relatively long. The breeder who picks out young animals to retain in his herd without due regard to these characteristics will fail to measure up to his expectations. Size of frame will gradually decrease.

With much justification in weights attained at an early age, big-type hogs have established their reputation for efficiency as meat-makers. Where pasture is the main dependence in summer they are accounted good grazers; where self-feeders are used from the time th little fellows first begin to eat, the big-type pigs maintain a wonderful balance of growth and simultaneous fattening. That subtle capacity for attaining greater size of frame at maturity carries with it greater meat-making possibilities. There may be no gain in economy under some circumstances but results come more quickly.

Big-type hogs have established their prestige in show and salering during the very years when medium-size hogs have been market favorites. The early-maturity of the small type fails to win favor in this practical test. The excessive size of a 900-pound boar is of no value in itself, but the giant does transmit that great digestive capacity and growing ability which bring the pigs up to 200 to 300 pounds in record time. This practical reason for the big-type hog is of overwhelming importance in these days when production must be quickened all along the line. And there is a deep-seated physiological reason for big-type efficiency. Growth is rapid when the animal is young and it becomes slower as maturity approaches. The big-type hog reaches market weight and is sold during the flush of early and rapid development.

Hogs and sheep share alike the capacity for putting on sufficient fat at an early age to meet market requirements. Not for making champion show wethers, but for producing money-making fat lambs the larger breeds of sheep have an established standing. This would be impossible if lambs would not fatten readily while growing.

The early slaughter of pigs and lambs before they are half grown may seem a sacrifice of potential meat-making powers, but consumers' specifications demand it. A reaction is evident in the sheep market. Producers are holding back spring lambs this year to make more weight and more wool on grass through the summer.

The case of cattle has been different. They do not fatten so readily when half grown. This simple fact has proved the stumbling block of hundreds of feeders every year. Any farmer can fatten a two-year-old. Only a skillful feeder can fatten a yearling. Most feeders have suffered an unfortunate experience with their first attempt to fatten calves by the time they are a year old, for the youngsters eat all the feed intended for them, but just grow and grow withou getting fat.

The war market tolerance of scanty covering over back and ribs has come to the rescue of feeders afflicted with cattle having more growth than fat. Of more importance than stopping the loss on yearlings is the bearing of this market standard on economy of making beef. With less fat demanded on the cattle it is possible to grow beef largely on roughage. Silage and hay have finished some of the most profitable cattle marketed this spring. In their ability to make meat independently of much grain consumption such cattle have become exceedingly economical producers of human food. Making beef chiefly on roughage seems to have become established for the period of the war as a sound economic policy. The cattle are marketed thinner, but their weight and finish are made largely on a growing ration. This change places cattle on a plane similar to sheep and hogs in their meat-making position and economy.

The work of cattle breeders has been guided in the past by the course of the fat cattle market. The popularity of fat yearlings was responsible for the volution of cattle of more refinement and earlier maturity than old-time feeders wanted. These smaller cattle put on fat readily at an early age. They are succeeding wonderfully well now in taking on sufficient fat with only a ration of coarse feeds. A little more time is required in finishing the cattle to meet even this lower standard, and less weight is commonly secured before the cattle are sold. The type of cattle we are breeding seems to fit very nicely into this new regime. Every energy of beef cattle breeders can for th present be bent upon increasing their herds upon pre-established lines. The feeder can readily change his methods so as to finish cattle of this type economically and suitably. Such a happy situation is

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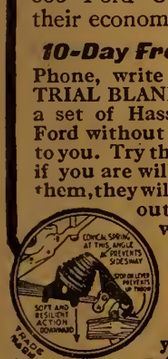

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THE "USEFUL KIND."

Some days ago a prominent and experienced judge of high-class animals was heard to say that a group of animals was composed of the "useful kind." The insinuation was that they were rather too "plainly" bred and of "common" families, and that, though in good condition, uniform, healthy, and of proved ability as producers, it was out of the question to expect them to bring prices much above the prices they would bring on the market.

It is a matter of regret that it is deemed essential for an animal to have a pedigree that some group of supposedly expert pedigree connoisseurs see fit to commend, in order to be regarded as well-bred. It is also unfortunate that, in some cases at least, it is deemed essential that the maternal line should trace directly, though it seems to matter little how distantly, to some female which has been almost adored on account of the high favor in which some admittedly great breeder or judge has held her.

It would be consummate folly to argue that there should be no attention given to matters that deal with the bloodlines of breeding animals. Even breeders of grade animals know that this important point cannot with safety be overlooked, and the intelligent farmer who buys a brood mare or other animal is concerned about the sire and dam of the animal from which he hopes to raise good animals. But there is needed a larger appreciation of the fact that, for instance, the bloodlines of a Young Mary and of a Lavender may be almost identical, so far as actual worth, measured by heritable excellence is concerned, provided the three or more top crosses are alike. There is need for a more general appreciation of the fact that the way to breed really good animals is to give attention to the sires for a number of generations, rather than to follow in a blindly worshipful way the course mapped by the advocates of the so-called "fashionable" maternal or other bloodlines.

After all, what more can be said of an animal than that it is of a "useful kind"? Unfortunately, there is small reason to believe that this could with certainty be said of some of the dainty, highly-fitted, and successfully exhibited meat-producing animals that some new breeders have within the last few years been willing to pay large prices for. Too many beginners have started their breeding operation with highly-fitted animals that are far too costly and to delicate to be of much use in establishing a really high-class herd or flock for the economical transformation of feed into a valuable and much-needed food product.

If the agricultural colleges want to conduct a most valuable demonstration of the importance of good blood, would it not be well worth while for them to found herds of high-class, though possibly, and in fact, preferably, "plain-bred" females, mating them with animals of approved type and of breeding that would indicate that there was a strong likelihood of their being able to transmit their good qualities, regardless of the fashionableness of their breeding? Thus far it seems that more attention has been given to showyard records and fashionable breeding than to the selecting of animals that are likely to be able to reproduce well, regardless of the opportunity that they may or may not have had of making records for themselves in the showyard.

Only the other day a well-known stockman called to the writer's attention a common animal sired by a male that has been the subject of much favorable publicity. To say that the animal was far from a highly excellent one is putting it mildly indeed; but it was of the kind that one would expect from its sire. Although this sire was able to win high honors in a great show, there was never a time when he would have been regarded by capable producers of market animals as a probable sire of animals with enough natural scale and vigor and capacity to be able to make a large and profitable utilization of the feeds that must be the basis of rations used in economical production. That this animal enjoyed at least temporary fame seems more largely due to the fact that he was brought out under the management of men who were willing to provide every possible aid to development, regardless of cost, than to any extraordinary natural excellence. From toes to nose he was a tidy, well-finished animal. What he would be like in circumstances such as about all rent-paying animals must encounter seems to have been pretty well demonstrated by the appearance of his offspring, delicate, undersized, worth less than most good grades for actual use as a producer of the much needed animal products that are now high in price.

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Let the beginner be sure to secure rather than avoid the "useful kind" in selecting foundation breeding stock, remembering that there is no other character in animals that is so permanently in style sa tuility. When the butcher inquires concerning the female line of ancestry of the animals offered or the winnings of parents that have been shown will be soon enough for the breeder to base his selections solely upon the spacious arguments of the advicates of only the limited number of families that are within the inner circle of artificial animal aristocracy. The real need of the hour is more economical animal production.

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THE HORSE

WATER EXTERNALLY AND INTERNALLY

There should always be sponges in the stable for cleaning eyes, nose, under the dock and the parts bare of hair which are tender and inconvenient to brush. In warm weather the sponge may often replace the brush with thin-haired horses to advantage. After the hair has been shed there is littlte trouble in reaching the skin surface with the sponge and in fly-time much irritation is allayed by the use of the sponge if a little coal tar dip is adder to the water. When short-coated horses sweat freely day after day there is but little dirt to be removed from the skin, yet a good deal of sticky sweat from the hair. I think I can do the work two or three times as fast with the sponge and keep the horses cleaner and the skin in better condition. I like to hose off horses when convenient in hot weather. Some people say it gives them colds. That is not my experience, but of course some horses may have no reaction after the bath and be ill-affected. Just becaause you hose a horse that is no reason why you should try to drown him or chill him to death. Three or four minutes or less will suffice to remove the sweat and make him ready for his feed, and he will be the sooner redy for work. In very hot weather wehn the water is quite warm the horse may be sprayed longer, just as his master enjoys a more protracted bath. In cool weather if the sponge is used it is not necessary t omake a horse very wet. His skin and hair will repel a considerable amount of water and he will dry almost immediately. If he does not ,throw a light blanket on him. Horses may come in prettty well cooked at noon, yet if their faces and necks are bathed off they will soon be refreshed and feed well; they appreciate it and are much comforted. There is no need to wait until a horse is overheated to resort to watercooling; it is just as useful for the well horse.

Plenty of water inside as well as outside should be a standby in hot weather. Few people realize how often a horse is exhausted merely for the want of a drink, although they know that they freuqently go for a drink themselves and cannot continue vigorous work without it. A horse or man sweating freely loses a lot of salt —often so much that some of his digestive functions are interfered with. Horses should have salt where they can help themselves freely, but if salt has been neglected care should be taken that they get enough water; otherwise when they do reach it they are very apt to hurt themselves from excess.

It has been found by actual experiments on long marches under heavy packs that salt is excreted so freely that its replacement will cause refreshment, and enable men to carry on. Not long ago a German received a jail sentence for selling so-called chicken broth lozenges that were 96 per cent salt, the rest quite guiltless of chicken but merely a composition to hold the salt together. I have myself often partaken of soup tablets, and experienced much refreshment when I knew that there was really no nutritive value to account for it, and am of the opinion that it was the saline content that proved beneficial. Horses have been kept without salt until it was apparent that they would die if the treatment were continped, and a great deal of weight is unnecessarily lost by neglecting this essential.

The lack of water is a sure cause of shrinkage. Many a horse is sacrificed to insufficient watering in the spring. He succumbs to constipation or impaction, and in summer loses weight, appetite and vigor. It may be stated that watering three or four times a day is insufficient for horses at hard work in hot weather, and that access to water throughout the night very much betters their condition. If perforce a horse must be watered only at fixed times, it is far better to tie him at the trough for at least ten minutes, and let him satisfy himself slowly. Horses soon come to know if they are expected to satisfy themselves at one or two drafts, and then be jerked away from the water. You may often see an old horse holding his mouth in the water but not drinking; he knows that by this means he can get more drink. Anyway horses like to snuffle water and wash out their noses when hot and dusty. Range horses at liberty spend several hours at water in hot weather before they leave. It is true that they are tanking up for twelve or more hours, but then they are not in hard work, sweating profusely. They sweat a good deal but so do all horrses all the time, loss of water through the skin never being arrested in warm weather. The loss is least at night; it seems that animal tissues are better refilled by evening and night watering.

Notwithstanding some risk of fighting and kicking, it usually pays better to let the big fellows run and roll at their ease, for they remain in much better condition, and much sickness is avoided as an offset to an occasional accident. Where we do not feel we can run the risk, horses should be watered after supper, and a pail of water set in the feed box for night drinking. It will practically always be found empty in the morning, and yet the horse will take about the same before breakfast.

Water should be kept clean. Lime in th etrough will precipitate the dirt and keep it sweet. Manay horses will gi short if water be foul. Water will not take the place of feed, but feed will be wasted without enough water.—L. Ogilvy.

PASTURE FOR HORSES

Whether work horses should be grazed or not depends a great deal on the abundance of the grass, and also on the age of the horses. In any event it is better that they should have enough green feed to regulate their bowels and keep them in the best condition. Many pastures simply entail a night's work after the day's labors, for so many seem never to realize the difference between what is requisite for a goose at leisure and a horse at work. Pasture with them is pasture, and it suffices. A man told me that his horses were not doing well on grass. Since I knew his pasture, I knew very well that it was not the grass that injured them, however bad they did, but a lack of roughage.

As a rule the horses themselves will furnish a good indication of whether pasture suits them or not. As a rule habit causes old horses especially to seek the barnyard after an hour or two of grazing. They seem, unless pastured throughout the years, to crave dry feed, and with but a modicum of green feed within limits, and not too rapidly, they can be restored to the grazing habit.

Of all animals horses are the most fastidious about pasture; they hate long grass as a rule, and will insist on gnawing the shorter, sweeter areas down to the roots. Often it will be found that sweetening the lower parts of the field with lime will make them graze far more evenly. The horse is naturally a dryer feeding animal than the ox. Buffalo grass just about exactly suits him; bluegrass he loves; the coarser grasses especially, if soured by rank growth, he eschews. It may sound paradoxical, but we can often have more grazing by mowing the coarse grasses, and freshening the growth. Moreover, the cured grass will also be eaten after the sun has sweetened it. A horse at the hardest work really requires dry feed, because it is more concentrated for the use of his small stomach; it requires no labor to gather and less to masticate than the great bulk of green feed that must be eaten to provide the same nutriment. It is up to us therefore to judge how much time and the energy the horse should devote to alimentation and how much he should put into travel and the collar. In any case, the changes must not be so sudden and violent that they cause stomach disturbances. In many countries with a long-grass season outside, the short-grass farm horses perform a great deal of labor, mainly on grass; they are pot-gutted, sweat profusely and are unable to endure the hours of labor at a fast pace that the dry-fed horse easily performs. Farming has to be adjusted to the team's ability. Farming in the north, with big high-fed teams, requires fewer men than elsewhere.

It is easily noted in Britain, which is grassed all over, that the further south one journeys the slower the pace of draft teams, and this is for the most part due to a greater dependence on grass. In the midland shires and to the south in the north, grazing horses is mostly coincident with the light work of midsummer; the heavy plowing and other work come in the dry feeding season. Personally, I prefer to let horses have about what green pasture they want. Continuing hay feeding without waste throughout the season the horse's appetite will lead him to consume about the right ration. Sudden change is avoided. This entails a minimum amount of grain feeding proportionate to the work to be done, the horses are at all times full, and yet not distended, and grain can be cut or increased as needed. If the pasture is good horses will fill rapidly, then rest and then fill again, which is their natural habit. So soon as full, they are apt to lie, and this rest is as important as the feed. Harassed by flies if they have to keep going all night as well as all day, they become weary. Too much stress on their legs makes them slow and lethargic. We cannot feed quite as highly as we should like but efficiency must be maintained.

In the absence of pasture some green feed should be provided in the yards, for by its use the horse gets far more out of the dry feeds furnished. This is not a matter for argument, but one that has been thoroughly tested. The one thing requisite is that the green feed be in the best condi-

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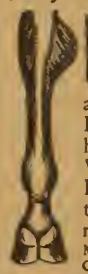

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tion. I know a stable of valuable trotters that invariably get a feed of lawn grass after their Monday work-out, and another toward the end of the week, and it suits them. On the other hand, I have known horses that had to subsist on lawn grass to die of fermentation and impaction. There is nothing the matter with lawn grass for the great majority of horses, but they need other feed. Longer grasses, alfalfa, or vetches are to be preferred; the horses will not eat a great deal of it, but it will take the place of bran mashes, and millfeed is very dear. If there is no grass, crushed flax seed meal, a teaspoonful at a feed, is on the whole to be preferred to mashes at any time, and especially at present prices. Most horses will do better with their mash divided throughout the week than all at one or two feeds, but many good horsemen hold contrary opinion. L. Ogilvy.

COLLECTING THE BEST MARES

Although the draft horse business is not lively, a quiet movement is under way which is of great significance to the improvement of the breeds. The best mares are gradually drifting into the hands of the best breeders. Whenever some discouraged breeder decides to sell a high-class purebred mare, the offer is readily grasped by any of the men who are really successful breeders. Those who have made the most money produ ing pedigree horses have built their careers largely upon the best of their mares. Their success is in proportion to the character of the dams used. Even the best of sires cannot overcome the deficiencies of inferior mares. The men who are shrewd enough to seek out and buy the desirable females are also fully alive to the importance of the sire. They always havethe best that they can secure.

A period like the present, when many a breeder is getting discouraged, offers a welcome opportunity for skilled breed builders to enlarge and perfect their foundations. They can buy mares now which in times of high prices would never be for sale. With a moderate scale of values there is not such a wide spread between the best and the near-best, so it is possible now to make additions to the stud without a very heavy investment. eliminated. He is waiting for high Competition of the average breeder is prices to be in force before deciding that an increase of production is justified.

Many a desirable brood mare is raised by some man whose experience is limited. In his own hands she might never be mated to a stallion of sufficient excellence or of just the right type to intensify her merits in the offspring. Her possibilities might be lost. The improvement of a breed is really advanced by the removal of the best mares from the hands of the average breeder and their collection by men who have mastered the science of breeding draft horses. Then a desirable class of offspring is almost a certainty instead of a chance. Then further improvement is probable instead of almost impossible.—Breeders' Gazette.

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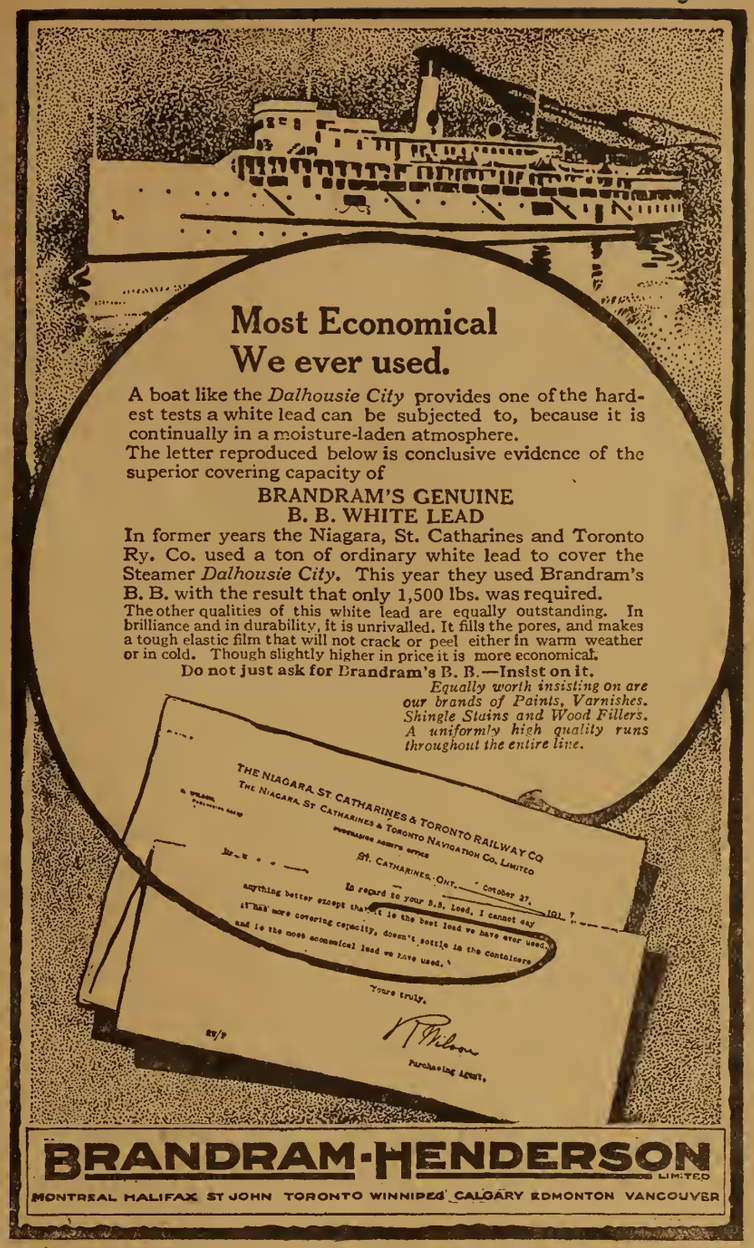
BRITAIN'S MOVE AGAINST UNSOUND SIRES

Britain will probably prohibit the traveling of stallions that are not licensed as sound. The Shire, Clydesdale and Hackney societies have approved the principle of the bill, and have suggested some amendments. Considerable opopsition is likely to develop, but the reports from buyers of horses for army use concerning the percentage of unsound animals will constitute probably the strongest backing for the bill. Its provisions will apply only to stallions that are traveled; those which stand at home will not be required to come within their scope. Such discrimination may be necessary in order to put the bill throuh, but it is certainly illogical, and would result in limited results from such drastic regulation of practices long held to be purely within the personal and private realm, free from invasion by legal enactments.

Primarily all such legislation is a distinct reflection o nthe intelligence of the farmer-breeder. It means that the farmer is too ignorant or too indifferent to breed to a sound sire. The official view of the proposed discrimination seems to be that farmers are disposed to patronize stallions which are conveniently placed at their disposal, and that if the soundness of traveling stallions is assured, it will result largely in the elimination in time of inherited equine unsoundness. Naturally such a licensed sire would command a higher service fee, and this fact may be expected to throw some mares to matings with stallions which stand at home without the approval of official inspection. It would be far better if an educational campaign could bring to horse breeders a clear and keen appreciation of hereditary unsoundnesses. No other industry has found it necessary to invoke the protection of the law against the purchase of "junk" by its members.

A man left his umbrella in the stand in a hotel, with a card bearing the following inscription attached to it: "This umbrella belongs to a man who can deal a blow of two hundred and fifty pounds weight. I shall be back in ten minutes."

On returning to seek his property he found in its place a card thus inscribed: "This card was left here by a man who can run twelve miles an hour. I shall not be back."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A HENHOUSE BUILT FOR CONVENIENCE AND EFFICIENCY

To build a poultry house and build it to meet the requirements of the hen under constantly varying conditions, and with no protection of artificial heat for winter or natural shade for summer is a problem that must be dealt with scientifically. Ventilation is the most important fastor in the construction of all poultry houses. The body of the fowl is so constructed that it can stand neither too much cold nor too much heat. As in the dog, the body gases are mostly thrown off by respiration. Breathing is rapid, and large volumes of air rich in oxygen are necessary.

The hen, an egg machine, requires the highest type of efficient housing and general care. She is working constantly. The grinding of her feed continues at night, and throughout the day she is busily gathering more. At night she goes to roost with a full crop. Efficient lighting of her working quarters is essential for her to do her best. All parts must be equally lighted in order that the floor space allotted to each fowl may be utilized.

To construct walls for warmth in winter and coolness in summer is an absolute necessity for eggs at these times. The north, east and west walls should be built tight for winter, but for summer they must not remain so. Ventilation must be provided.

Conveniences

Convenience and arrangement of interior fixtures so as not to interfere with floor or lighting, and to be properly proportioned to the size of the flock, is another problem. Ventilation in such a house is accomplished in a way to prevent all possible drafts striking the birds. A wooden baffler is constructed in troughlike fashion. Each baffler is V-shaped, and to prevent drafts one fits over the other. All windows are on the south side. Each window consists of two sashes, both easily removed, and the upper is so constructed as to fall back into a specially made slot of triangular shape.

In this instance they are made of galvanized iron, but can easily be made of wood. Any draft that may enter the windows is then forced up next to the roof, thus preventing sudden chilling of the birds on the floor. A constant temeprature is ideal. Any appreciable variation one way or the other should be guarded against; but at the same time there must be a certain amount of circulation throughout the pen. Baffler ventliation, wth window ventilation, can meet this demand.

Each pen is fourteen feet square and accommodates fifty females and three males; is seven feet to top of plates on south side and five feet on the north. Solid wooden partitions, boarded to the roof every fourteen feet, divide the pens. Double action doors lifted to swing eight inches off he floor to clear the littter, with a removable board beneath for eleaning convenience, are used. The location of the door is best nearer the north wall than the south. This, then, at all times allows the birds the floor space on the south side, which they prefer to that of the north and which they use most.

Storage Hoppers in Each Pen

A feed house is not necessary in connection with this poultry house. Each pen contains its storage hoppers. The grain hopper is five fee tlong and fifteen to twenty inches deep, and holds approximately 500 pounds of dry mash. It is built in. All hoppers, nests and droppings boards are placed two and a half feet off the floor. This allows the fowls full use of the floor space. The water stand, grit and shell hopper are next to the window. The entire north side is taken up by the roosting space and broody coop. The droppings boards are hinged to the wall, and the supports for the perches are likewise hinged so that both may be swung up out of the way.

That does away with the chickens roosting on the perches during the daytime. The brackets supporting the boards are also hinged to swing inward and are out of the way. The opening below the boards is for ventilationand extends to a similar opening on the outside wall. Each pen has its broody coop convenient to the nests where broody hens may be quickly and easily put in jail. Trap nests are used; one is allotted to every five hens. Scantlings are done away with to support the roof. Partitions are used for this, and the trouble from hens roosting overhead is done away with.—By M. E. Dickson.

WHAT IS A HEN WORTH?

It Depends Largely Upon the Eggs She Lays

The average price of hens sold on the market varies from fifty cents to three times that amount, depending on the weight of the hen and where she is sold. But the poultry breeder should be more concerned about the value of a hen as a producer.

The difference in value of hens is to be determined by their possible product rather than by their value as market meat.

A poultry breeder paid five dollars for a standard bred hen. Sixty-three chicks were hatched from her eggs in one season. Some were poorly marked and sold on the market; others were developed and sold as breeders. The gross receipt from the products of that hen was $203.05. After deducting the cost of feed and care the owner was able to figure a net balance to the hen's credit of $154.30. The value of the hen was the amount she proved to be worth to her owner.

The value of a hen based on her production of market eggs can be accurately determined. Under normal conditions most pullets begin laying about their seventh month, and by the time they are eighteen months old they have been producing eggs one year. The cost of feeding and caring for laying hens one month has been variously estimated at from ten to twenty cents a hen, depending upon feed prices, locality and equipment.

There is another aspect of the value of a hen which constitutes the chief source of income of many standard-bred poultry plants. A hen's value during a four months' brooding season when her eggs are sold for setting, may be determined acocrding to the number of eggs laid and the price received for the eggs. The price per setting of fifteen eggs generally varies from one to twenty-five dollars a setting, depending upon quality and prize winning records of the fowls at poulrtry shows. Egg production during the brooding season may vary from three to six settings a hen and the returns may be easily estimated, depending upon the price of each setting.

Many cases coul dbe cited where hens have brought their owners fifteen or more dollars a setting for their eggs. It is therefore reasonable in such cases to credi such hens with a value equal to the returns from their eggs, less the cost of production and the expense of selling. It is easier to be assured of the value of a ten-dollar hen or even a $100 hen than it is to give any value to a hen wnich has no distinction either as a standard-bred or a layer.

Periods of Eggg Production

By a study of the annual egg records we are able to determine three distinct periods during which hens show a great variation in the number of eggs porduced. The last two months of the year and the first two months cover a period of 120 days—the winter period. The second and most favorable period for production is what is known as the brooding period, and includes the 122 days of March, April, May and June. The third period of the year in respect to egg production is made up of 123 days, consisting of the two hot months, July and August, and the two months just following, which are the molting months for a flock of poultry.

By tabulating egg records for the three periods of all the hens of four flocks it was found that during the 120 days of the winter period each hen laid an average of sixty eggs, or a fifty-five per cent. average; during the 122 days of the brooding period each hen laid ninety eggs, or a seventy-four per cent. average; and during the 123 days of the hot and molting periods each hen laid thirty-two eggs, or a twenty-six per cent. average. Thus there was an average of 182 eggs from each hen for the year. Each hen laid practically twice as many eggs the first period as she did the third and as many eggs the second period as she did during both the other periods.

By comparing the relative egg production of each hen in a flock having a low yearly record with the one given above, together with the record of a hen which laid 250 eggs in twelve months, we have what may be regarded as the comparison of the records of a low-record hen, a medium-record hen and a high-record hen.

The following observations are made from tabulated egg records for three periods of the year:

First, the low record hen laid her fewest eggs in the first period, whereas the medium and high-record hens laid their fewest eggs in the third period of the twelve months.

Second, the high-record hen showed her greatest increase over the medium-record hen in the third period.

Third, judging by the low-record hen a few eggs may be more easily produced durinfig the third period than during the first, but a larger number can be more easily produced in the first period than in the third, judging by the medium and high record hens.

Fourth, the variation between the number of eggs laid by the low-record hen during the three periods is greater than that shown between the results of the three periods by the high-record hen, indicating that the possible maximum average for the year approaches the maximum average for the highest period with the heaviest layers.

Causes of Low Egg Yields

Aside from the natural tendencies of a hen toward laying, any of the following causes may prevent the highest record in egg production:

Failure to provide a full balanced ration, at all times; fresh water, grit, shell, ash and dusting at all times; extreme changes of weather, cold, heat or wet; contracting mild or extreme forms of diesease; broodiness, lice and mites, irregular times of feeding, accumulated filth, overcrowding, lack of exercise, old and foul earth in runs, drafts, molting process, lack of ventilation, lack of growing vegetation, changing of hens from one pen to another, scaring or irritating hens, becoming too fat.

Most of the hindrances to egg production may be avoided by constant care and attention. In the order of their persistence they are: Molting, broodiness, heat, cold lice an mites, mild forms of disease and fattiness.

Any of these is apt to prevent the highest possible egg production in the flocks of the most skilful and best-equipped poultry raisers.

Mild forms of disease are very common among fowls during the third and first periods of the laying year. In the second period of the year succulent vegetation generally cleans and regulates the digestive tract sufficiently to keep down any form of disease.

The color and texture of the comb and wattles, together with the color, and condition of the droppings of a fowl, indicate the health. Certain types of bowel trouble are exceedingly prevalent among laying hens and hinder egg production, depending on the degree of severity. Too much fat is due to overfeeding of fat-forming feed and invariably develops about the egg organs of some hens during the hot months.

It is a well-known fact among poultry breeders that the extremes of weather and the sudden variations in temperature affect very noticeably the yearly egg records; however, neither cold nor heat as hindrances fully accounts for low averages in the winter and hot periods.

As a rule, low averages are the result of combined conditions which are partly due to weather, the kind of care hens receive, and the egg-laying ability of the individual hens.

SELECTING LAYING HENS

"Is there any way by measuring that one may tell how many eggs a hen will lay? Will a hen transmit her

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form to her progeny? Is there any rule as to the color of the pellets on the head as to whether a hen is a layer or not? Will a laying hen's eggs turn to white from yellow is she is a heavy layer? If a hen drop down behind will she be profitable to keep as a layer?—H. N. S.

Reply by Miller Purvis.—I have three systems by which it is alleged, the laying abiliay of a hen can be determined, the three costing at the originators' prices $11. One of them I bought about fifteen years ago, and the others later. All of them pretend to teach a method by which observation of the position of the pelvic bones will enable any one to determine beforehand about how many eggs a hen will lay in a year. These systems are of value only while a hen is laying, and then only to tell whether she is laying. They have been thoroughly tested but have failed in so many instances that they are not considered of great value. All these systems are all copyrighted I can not go into details here. The originator of one of them has failed to make predictions in more than one instance and in sóme cases has missed by a wide margin. In selecting hens for layers I always select those with bright eyes, stout, thick beaks and, in cases of Barred Rocks, those with rather wide heads, with overhanging eyebrows. The health of a hen is shown by a bright red comb during the laying season. These are the head points to be observed. The color of a hen's shanks indicates how good a layer she has been. The hen that has short toe nails is likely to be a heavy layer. Once Prof. James E. Rice of Cornell had his students kill several nests that had trap nest records, and dress them. Then he undertook to select the bodies of those which had made the best records. He succeeded. He then told his students that he had made his selections by examining the toe nails and selecting those which had worn their nails shortest by scratching. These were the hens with hearty appetites and the vigor that caused them to keep busy. I once heard Prof. Rice tell his students that the hen that was out the earliest in the morning and latest in the evening was the best layer. As a rule, the hen that digs up the most flowers and garden truck pays the largest profit. Plymouth Rock of all varieties, if not carefully fed, will drop behind—"bagging dow" we call it. This is caused by an accumulation of fat, and after a hen has bagged down she is more profitable to sell than to keep for eggs. The man who makes a specialty of breeding fowls can after a while make a fairly accurate guess as to the laying ability of any of his hens. He will not be able to explain just how he arrives at his conclusions. He decides from what may be called a personal acquaintance with each individual in his flock. The hen that follows him and sings for him, is always ready to run for feed, and likes to be picked up and petted, is the one that is most profitable. Laying ability is transmitted in a zigzag way. The hen that makes a heavy record does not always transmit her laying ability to her daughters. That is, one can not count with certainty on getting his heaviest layers from his heaviest-laying hens. Laying ability is transmitted from a hen to her sons mor ethan to her daughters, and the daughters the able to transmit laying ability to their sons. For instance, a laying-bred hen that has made a record of 150 to 160 eggs in a year is more likely to produce heavy-laying daughters than one that has made a record of 200 or more eggs in a year. The son of a heavy-laying hen is nearly always the sire of heavy-laying daughters. It follows that to get heavy-laying pullets one should use the son of a heavy-laying hen, and to get the right kind of a male bird one should use the daughter of a heavy-laying hen.

FEEDING THE CHICKS

Several weeks ago, in order to test the fertility of the eggs which our hens were laying, we set a hen on an asortment of eggs. In due time the chicks hatched and as we had not secured our supply of prepared chick feed for the season we gave them wheat and sour milk. The wheat consisted of small grains screened out in recleaning wheat for seed. In this country there are no weed seeds in wheat as it comes from the machine but there are broken and shrivelled grains, so the feed the chicks got was just wheat and sour milk. The hen was put in a coop near a stack of alfalfa and as soon as the chicks were a few days old they begin to work on the broken leaves and blossoms scattered about. When the chicks were a week old the hen was turned out after the sun got up to warm the air. These chicks are now five weeks old and as hear ya lot as we ever had. They run in and out of the poultry houses at will and probably get some of the meat scrap which the laying hens have before them. They also get new grass if they want it, but I have never seen them picking at it.

This shows that chicks from the eggs of vigorous hens are hardy and get along on a very simple diet. This morning there was a light snow on the ground but the chicks did not mind it. They wer out and about as soon as the sun was up, digging away as if they liked it.

We have never paid much attention to complicated formulas in feeding our chicks. If they are all right when they come out of the shell they get along very well on the kinds of feed which the average farm suplie. If they can have sour milk from the beginning they grow on almost any kind of grain, if it is small enough so that they can swallow it. If I could get sound cracked corn I would feed it without any fear, as long as I had sour milk to feed with it. Cottage cheese made exactly as it would be for the table is most excellent feed to use two or three times a week in connection with the plain sour milk. It is very rich in protein and builds up the muscles and bones while the corn supplies the energy and fat. In these high-priced days, when it is so neoessary to keep up and even increase the poultry stock of the country, we must get along without any frills on our feeding operations, and when we can save money in feeding it is our duty to do so. Elaborate rations are all right in normal times but now we must use the cheaper substitutes that are available on every farm.—Miller Purvis.

THE POULTRY CALENDAR

For Feeding and Watering

In poultry raising there is, as ordinarily practiced, a great waste of water and feed. Wasted water fouls the litter and the floor and makes insanitary quarters; wasted feed cuts deep into any possible profits that might accrue. Careful estimates and experiments tend to prove that perhaps twenty-five per cent of mashes, wet and dry, fail of their purpose when fed in open troughs or pans. Not only is costly feed scattered by the hens among the dust and litter that cover the floor, but greedy birds get into the vessels with unclean feet and the resulaing mess is not eaten. I have seen wet mashes packed by repeated tramplings so that half was lost; and water becomes sewage.

To avoid such conditions and at the same time to conserve as much floor space for the use of the birds as possible, we place our water pans and wet mash containers on stands. We settled upon a water pan of galvanized iron four feet long, four inches deep and eight inches wide as most convenient for our purpose, and the stand to support it is made in this way:

We take two one-and-one-half-by-two-inch pieces twenty-six inches long, two one-by-two-inch pieces twelve inches long and one piece twenty-two inches long, and two one-by-one-inch pieces ten inches long. These are nailed together to make a standard, and two standards are used for each stand. Two twenty-six-inch pieces, for legs, are laid down, spaced twelve inches over all, and the twelve-inch pieces are nailed on, one across the top and the other eight inches from the ttop. The open space between the cleats is thus six inches. The twenty-two-inch piece is next nailed on eleven inches from the lower end of the legs, but on the opposite side from the cleats already nailed, and projecting five inches over each side, thus forming a ledge on which the platform is laid. The two pieces one inch square by ten inches are nailed vertically on the upper cross pieces, spaced one inch from a slot to receive the end of the parting board.

Birds Stand on Platform

For the platform, a board one by eight by farty-nine inches is nailed on the ledge of each of two standards, fitting between the legs and separating the standards a little more than forty-eight inches to make it easy to remove the four-foot pans; a board one by six by fifty-four inches to make it easy to remove the four-foot pans; a board one by six fifty-four inches is nailed on each pair of projecting arms. On this the birds stand while eating or drinking.

In the slots formed by the vertical pieces a board one by six by fifty inches is fitted. This board may be nailed or not, as preferred. A shoulder is sawed out at each end of the board so it may drop within an inch or two of the top of the pan; then by nailing against the strips the stand becomes very firm. This board is a very importan feature of the device, as without it the birds persist in getting into the feed or water, creeping too and fro constantly.

A cover one foot wide by fifty-four inches long, cleated at the ends to keep it in place and to serve as an additional steadying help, is laid over the top of the standards and the thing is complete. The cover prevents fouling from above; the parting board keeps unwary feet from straying into the pans; the height from the floor keeps all litter from feed or water, and leaves the floor unobstructed.

The galvanized pans, while intended primarily for water, are equally good for feeding mash, especially wet mash. For feeding purposes, however, it is well to board the platform over tightly so that whatever is thrown out need not be wasted.

Though the metal pans are in every way best for water, they are somewhat expensive; therefore for feed alone we substitute V troughs of the same length. For cramped quarters we find a modification of these stands useful. It is a double deck affair. The standards are made higher, with two platforms—one below to receive a water pan and the other to receive a V trough for feed. It works to perfection.

These stands are a part of the outcome of our campaign to free the floors of our poultry houses of everything, that heretofore cluttered them. The birds need all the room, and cleanliness demands that there shall be no inaccessible places anywhere.

For feeding purposes alone we use these stands up to sixteen feet long. Long stands, however, have a third standard in the middle to support the trough and cover.

HOWARD MITMAN.

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FOR HOME AND COUNTRY

This Department will be utillzed to the best interests of the homes in the Marltime Provinces. Subjects relatlng to household science and all that stands for better homes and communlties will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B., solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's or-ganizations.

THE BRAVEST BATTLE

The bravest battle that was ever fought.
Shall I tell you where and when?
On the maps of the world you will find it not;
'Twas fought by the mothers of men.

Nay not with cannon or battel-shot,
With sword, or nobler pen;
Nay, not with eloquent word or thought,
From mouths of wonderful men.

But deep in a walled-up woman's heart.
Of woman that would not yield,
But bravely. silently bore her part—
Lo—there is that battlefield.

No marshaling troops, no bivouac song;
No banners to gleam and wave!
But oh. these battles they last so long—
From boyhood to the grave!

Oh! ye with banners and battle-shot.
And soldier to shout and praise,
I tell you the kingliest victories fought,
Are fought in the silent ways.

THE LIGHT-FOOTED MOTHER

(By Stella Burke May)

Ellen Malone rubbed her wrinkled eyelids with one work-broadened hand as she pushed back a wisp of hair with the other, and, opening her eyes, blinked as the sun shone upon her from the half-opened window and from cracks in the limp green shade.

"Seven o'clock!" she exclaimed, the accusing hands of the cheap clock on the bureau pointing shamelessly to this unwonted hour of rising. "Seven o'clock! An the sun an hour high. Whatever's come over me, and it Tuesday and the Finlaysons' ironin' all folded down. and Annie's confirmation dress to be finished, and Johnnie out of shirts entirely, and school openin'!"

"Annie! Johnnie" she called, but received no response from the younger Malones sleeping across the hall—Annie in the one other bedroom the tiny house afforded; Johnnie in his curtained corner of the hallway—so she wriggled out of bed and started to dress.

"Mrs. O'Hara was right," she remarked to the tired face in the mottled wall mirror;—" 'A light-footed mother makes a heavy-footed daughter'— and son ,too." she added to Mrs. O'Hara's maxim. " 'Twas not so heavy-footed they were a-dancin' off to the Labor Day Picnic yesterday—Labor Day—h'mmm—for me—a picnic for them. Mrs. O'Hara is right, it's spoilin' them children I am, slavin' away for them at the washtub. An' them all tired out this mornin' from havin' a good time; sleepin' till I call them to breakfast. O, ho," and she sighed; "if himself had lived it's a different life I'd be havin'. I'd like to see how a holdiay'd feel." glancing longingly at the bed.

Ellen Malone walked to the door of her room and listened cautiosly. The steady, even breathing of peaceful slumber came to her from Annie's room while Johnnie snored blissfully. A cool. September breeze fluttered the curtain, as though saying, "Come on, Mrs. Malone, I'll making ironing day easy fo ryou, for I'll blow between you and the stove so you'll hardly mind it at all." The sunlight trickled in a wiggly path across the bare floor, giving promise of its aid in the process of bleaching. But the few seeds dropped yesterady by neighbor O'Hara out of her sack of experience, as the two women compared the fruits of their labor, had taken root and were beginning to sprout.

"Shure, as long as you carry thim children on your back, they'll niver learn to walk," was Mrs. O'Hara's remark. "Children are all alike," she had added; "if you do their work for them, they'll leave you do it. 'Tis a light-footed mother that makes heavy-footed children. Taach thim to walk alone!"

Mrs. O'Hara knew. Ellen Malone, that was born Ellen Conley, was always light of foot. Lightly she had tripped over the peat bogs of her natlve village in Ireland. Lightly she had picked her steps down the gangway to Castle Garden; llghtly she had danced in to the heart of Daniel Malone. And with nimble foot, though her heart was heavy within her, she had assumed life's responsiblities and the care of her little family when "himself" was laid to rest. This panorama flitted across her mind and reflected itself in her miror as she turned again to look at the face that had once been the rosy-cheeked Ellen Conley. Suddenly she grew very, very tired, and the tumbled bed with its faded blue quilt looked very, very comforting and welcoming. Once more she listened for some sound of awakening from the young people, but none came, and without daring to argue with Conscience, and before she fully realized what she was doing, she had slipped off first one run-down slipper, then its mate, and ere the still, small voice had caught its second wind, she was back in bed with the covers pulled up close around her neck and her face turned to the wall. Morpheus, put to rout at seven o'clock by the September sunshine, beheld from afar the droopy eyelids. He returned, sat upon her bedpost, found himself endured. then pitied, then embraced.

At eight-thirty Annie Malone awoke and listened. They say that people who live near the sea find sleep impossible when they spend a night away from the lulling sound of the waves on the shore. It must have been the missing of the splash of water in the Malone kitchen that awakened Annie. There was no swish of clothes as they flopped from the suds to rinse water; no rattle of pans that accompanied the starch-making process. There was not even the odor of coffee boiling nor the sizzling of potatoes frylng.

Annie crawled from bed and looked across the hall to her mother's room. A slender form on the bed, swathed in a tightly drawn quilt, startled her.

"Ma. are you sick?" Annie called. But no reply came from the slumbering woman. "Johnnie, Ma ain't up!" she called to her brother. "She must be sick or something."

By degrees the full import of this announcement struck in upon the waking youth, and the first thought that came to him found utterance:

"Gosh! and who'll get breakfast!" It was the first time ln Johnnie's fifteeen years of eyperience that Ma had afiled to have his breakfast on the table when he clattered down stairs.

Johnnie stretched and yawned and pulled himself out of bed and together they went to their mother's room. Ellen Malone dreaming of care-free days of youth opened her eyes and regarded her two young hopefuls.

"Ma you ain't sick!" came in one breath from both but Mrs. Malone only raised her hands to her temples as though unable to bear any sound and said: "Sh-sh-sh. G o'way go 'way" and once more truned her face to the wall.

Puzzled the children went back to their romms — if Johnnie's corner might be called a room, and dressed.

Annie was almost seventeen, but she had never prepared a breakfast unaided in her life. Annie was fitting herself to be a school teacher, and embryo school teachers had no time for household tasks. Annie was very fond of her mother; so was Johnnie; but Mrs. Maione always had prepared breakfast so how could they learn! Annie sometimes washed the dishes, under protest, of course, but still sometimes she did wash them, always arguing that "Johnnie ought to be made to wipe, like Jimmy O'Hara did"; but Johnnie was an elusive chap after meals, and Mrs. Malone was too busy or too tired to call him; besides, Johnnie always carried home the clothes after his mother had piled them neatly in the basket and "Gee, whiz it's a long way to Finlayson's and a felow has to have some time to play with the boys!"

Annie had never dressed hurriedly nor did she now, but in justice to Annie let it be said that she dressed less deliberately than usual. Then she went down stairs, and, passing through the kitchen—how cheerless a kitchen is without a mother and a fire—went over next door and told Mrs. O'Hara that she guessed Ma must be sick, "'cause she isn't up, and its after eight o'clock." Mrs. O'Hara was surprised, honestly surprised, and came right over and went to Mrs. Malone's room. Ellen Malone turned over, saw Mrs. O'Hara, and the effort of turning must have distressed her greatly for her mouth dropped at the corners, her eyes rolled ln evident anguish, and again she lifted her hands and pressed them to her temples; but Mrs. O'Hara who had raised eight children and three husbands, and knew a great deal about human ills and human nature, discerend at once the seriousness of the ailment; in fact, there was not a doubt left in Mrs. O'Hara's mind when she saw, just as Mrs. Malone's fingers closed over her right temple, that she winked her eye.

"Rest and quiet!" she prescribed for the patient to Annie, who stood gloomily just inside the door, and to Johnnie who stood just outside.

"Oh, dear," said Annie, "I've a headache myself this morning."

"You'll feel better after breakfast," her neighbor assured her; better make some coffee for your ma; it'll be good for her."

Behind the kitchen door Annie found her mother's apron, and started to make a fire ,but the wood-box was empty.

"Go spilt some wood," she stamped impatiently at Johnnie.

"Jimminy crickets, ain't there no wood? I split some Sunday."

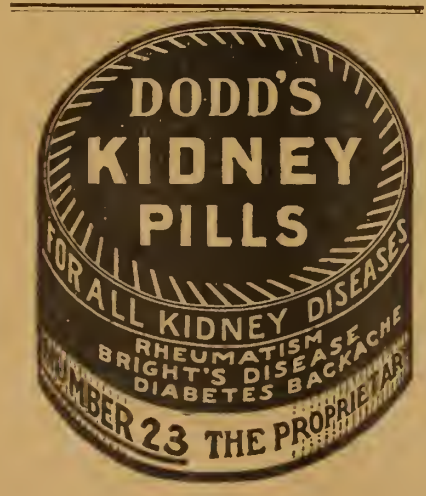
Ma Malone had always chopped the wood the first thing each morning after she fed the chickens, but Johnnie didn't know that, of course, becauase Johnnie wa snever awake then. Occasionally Johnnie chopped some before supper, if he was within hearing distance of his mother's call; but yesterday was Labor Day and no one worked that day; no one but Ma Malone. He couldn't find the axe, and had to go upstairs to ask his mother, who told him, in a pained voice, just where it was in the shed kitchen.

It was not as restful a morning as it might have been for the tired litttle woman up stairs, because there were necessary questions from below; how much coffee to put in the pot; were there any cold potatoes to fry; did she know the bread was out; where was any money for Johnnie to go to the store; Mrs. O'Hara says the Finlayson's clothes will mildew if left in the basket this warm day, and what's to be done about it?

The school-bell rang just as Mrs. O'Hara—who kept popping in at ten-minute intervals—was about to impress Johnnie into the washing of the dishes, and never did Johnnnie start for school with such willing feet.

Annie was very sad at the enforced absence on the first day of the school year, but at Mrs. .O'Hara's "Tut! Tut! An' your poor Ma sick in bed," resigned herself to the inevitable.

It was a weak, flat cup of coffee, and sad, flabby potatoes and an ebony-hued piece of toast that found their way to the mother's room for breakfast, but she ate them so greedily that Annie who never could eat when she had a headache, feared a relapse and so told Mrs. O'Hara; but the kind-hearted neighbora reassured her, saying: "The trouble ain't so mcuh in her head as her feet." This was a surprise to Annie, who had understood that her mother's trouble was entirely in her head; bu tMrs. O'Hara said: "It's a



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little of both, but it's mostly in the feet—they've been movin' too fast."

Upstairs Ellen Malone was struggling with her mother heart, which was uttering a protest against Annie's missing a day of school; aand she might have yielded but for the timely arrival of Mrs. O'Hara.

"They'll never walk if you carry thim," she whispered. "Take it easy; it may be your last chance."

By noontime all Crowley's lane was aroused to th efact that Ellen Malone was sick and the childrei had been doing her work—or their own.

"Ellen Malone's a-dyin'! Ellen Malone's a-dyin'! She'd never stay in bed if she wasn't near to death's door," spread from house tot house, and excited mothers and sympathetic wives filled the kitchen.

Annie surprised everyone, but herself most of all, by the array of stiff, smooth garments that stood out from the greedy clothes-horse. True, she had a good teacher in the person of her alert neighbor, who was never too far away from the opposite window to answer the many questions shot from the Malone kitchen, such as how to make cold starch ,did she iron sleeves on the right or wrong side, and numerous others.

The stove called constantly for more fuel and by the time Johnnie came home to dinner, his morning's stack looked like Mother Hubbard's larder, but Annie refused to give him any dinner until he split more wood. His back ached and he was hungry, and the meal of watery cabbage and underdone beef was not just what Mother used tomake. Moreover, the baked custard that Mrs. Murphy's little Jennie brought over for the invalid spoiled his appetite for substantial foods, and caused him to remark to his sister after seeing the dainty dessert disappear spoonful by spoonful at the hands of the sick mother: "Seems to me like Ma has a pretty good appetite, if she is sick. She ate that custard like the O'Hara kids at the picnic."

But when Father Donahue came in the afternoon, he shoook his head gravely and, after a whispered conversation with the next-door neighbor, announced to the children: "Your mother needs rest; she's been working too hard."

By four o'clock Annie was hot and tired and Mrs. O'Hara offered to "spell" her awhile at the board while she mended Johnnie's Sunday pants, saying:

"That's the way your Ma rests herself, mendin' and sewin', when she's tired wid ironin' and scrubbin' and bakin'. Go up and sit beside her wid your mindin'; it'll do her a dale o' good." And indeed it must have done good, for after one glance at Annie with hte mending basket, Mrs. Malone smiled and turned her face away and slept.

Johnnie did not return until supper time. He was accompanying Torchy Halligan on his paper route. It was a long route and took the boys to the outskirts of the town, and dusk began to fall before all the papers were "chucked" down a convenient sewerhole and husbands and fathers, returning home that night and finding no evening paper to peruse, broke the second commandment. But Trochy and Johnnie trudged on unsmitten by conscience.

After Johnnie had eaten his bread and milk, and carried tea and toast to his mother's room. Annie insisted on his taking home the Finlayson's clothes.

"I won't go a step; I'm tired." Johnnie announced.

"You will go; I've worked harder'n you all day," the elder sister replied.

"Well, it' sthe first time you ever worked, that I can remember." Johnnie retorted, adding, "No wonder Ma's sick, the way she works for you."

"Cry shame to yourself," interposed a voice, entering by the rear door, and bringing with it the ample form of Mrs. O'Hara. "Sure, Johnnie boy, if you didn't leave your Ma to split the wood and carry the water and coal, it'd help a little, too."

So Johnnie carried the clothes to Finlaysons', and returning, spiritually uplifted by a chance meeting of Father Donahue, chopped wood and filled the water paial and brought in a hod of coal. And Mrs. O'Hara, saying her beads that night, named one for Johnnie as well as for his mother and sister.

Two very weary young people bade their mother good night at the close of that workaday Tuesday.

"Good night, ma; hope you'll be well in the morning," and they meant it, too.

Johnnie's back ached from the unwonted labor, and he passed a restless night. Some time before midnight he arose to see if he could find some sort of liniment to take the twinge from the right shoulder, where the unused muscles were protesting, but, hearing a creaking on the stairs, he listened breathelessly for a few minutes.

"Burgulars!" he told himself, and remembered that he had left the two dollar bill Mrs. Finlayson had given him for the washing, on the shelf in kitchen cupboard. His heart thumped ae he waited, and then he heard the creak of the cupboard door, opened by stealthy fingers. It was some time before he could summon enough courage to approach the stair railing that commanded a view of the kitchen. But at last he gathered himself together for the supreme effort, and took three cautious steps, which brought him to the railing. For several minutes he watched. What he saw was not a burgular in the act of appropriating the two dollar bill. But it was something much more disquieting; so disquieting that, though he felt his way cautiously back into bed, making no sound, he lay awake for a long time, thinking, studying.

In the morning Johnnie arose at six o'clock and tip-toed to his mother's door. She appeared to be sleeping. He cautiously approached his sister's bed:

"Sis," he whispered, shaking her shoulder, "Sis, you'd better get up," and as her eyes opened he put his fingers to her lips and cautioned silence. "Sh-sh-sh!" he whispered, "ma's puttin' somethin' over on us. She wasn't sick at all yesterday. I saw her down stairs last night, well as could be, eatin' a sandwich as big as your head."

Then he went back to his room and dressed. Annie dressed too, dressed very quickly, and as she dressed yesterday's suspicion straightened itself out into a reality.

"Ma, are you going to be able to get up today?" queried Annie, impatient with fear of the reply.

"What! You up?"

"Yes, and Johnnie's down stairs already. I think he's emptying the ashes."

"Indeed? Why, yes. I think I feel better this morning; I believe I can get up," and a deep, relieved sigh escaped from each.

Mrs. O'Hara came over while the

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family were eating the breakfast that Annie had helped prepare, while Johnnie fed the chickens and raked the patch of green they called a lawn.

"The saints be praised, you're better Ellen Malone!" the neighbor exclaimed, rejoicing, indeed.

"Yes," came the rejoinder, "but my feet still feel a bit heavy this morning."

"Well, niver worry," Mrs. O'Hara replied. "Annie's are gettin' much lighter. And as for Johnnie; sure, it's the regular fawn he's becomin'!"

THE NEW DOUBLE KNITTING

Two Socks at Once on Four Needles

Materials required: Two 2-ounce balls of knitting worsted and four steel needles, No. 12. Size 11—Cast on 60 stitches, 20 on each of three needles, and knit 2 purl 2 for 35 rounds. Then make the top for the other sock just as directed for the first one. Put one sock inside the other. On the outside of the sock purl all work; for the inside of the sock knit plain.

First row—Silp one stitch alternately from each sock. Now you have 40 stitches on each of the three needes. Make the twentieth stitch on tho first needle the seam stitch. Now work 30 rounds, knitting plain on the inside of sock and purling on the outside of the sock, having two separate balls of yarn and knitting from one for the outside.

Knit 1 stitch with a thread from one ball and purl the next stitch with a thread from the other ball and continue in this way all through the sock. When you reach the seam stitch knit instead of purling on the outside, purl on the inside instead of knitting, and then continue the rest of the row as directed. Work for 30 rows. Then decrease on each side of the seam stitch on the inside sock and on the outside sock, taking 2 purl stitches together on the outside sock and knitting 2 stitches together on the inside sock on each side of the seam stitch. Repeat the decrease every tenth row and make three sets of decreasings, making 28 stitches on the needle on which you have been decerasing, instead of 40 stitches as the other two needles hold.

When the work measures ten inches from starting point start the heel on the needle on which you have been decreasing and add 10 stitches from each front needle, which makes 48 stitches for the heel and 30 stitches on each front needle. Heel—Continue to work as you did for the leg of the sock, purling on the outside and knitting on the inside with the two balls of yarn. Work the 48 stitches for 20 rows. Then work 36 stitches and decrease, knitting 2 together and purling together. You will have to change the stitches a little in order to do this, as the socks must be kept separate. Turn the work and work back until you have 12 stitches unworked on the needles. Then work 2 together as you did on the row before, and repeat this at the same place until the heel is all worked. Pick up 20 stitches on the inside and the outside of each side of the heel. Now arrange them on one needle as you slipped them on when you started the double sock. Hold threads tight at the corners where the gores begin o rsmall hole may result. Darn if necessary. Decrease each side every third row until there are 120 stitches on the feet, 30 on each side needle and 60 on the front needle. Work 55 rows as you did for the leg.

Now take the socks separately and finish as you did for the single sock. The feet should measure nine inches from the back of the heel.

First row for the toe narrowing—Knit 6, knit 2 together, knit 6. Repeat for one round. Knit six rounds without narrowing. Knit 5 stitches, knit 2 together, knit 5 and continue for one round. Knit 5 rounds without any narrowing. Knit 4 stitches, knit 2 together, knit 4 and repeat for one round. Knit 4 rounds without narrowing. Continue in this way until there are 24 stitches left. Divide on 2 needles, 12 on the front needle and 12 on the back needle. Finish with a Kitchener toe.

THE CHILD'S EYES

There is a picture by Watts representing an old man sitting in a chair asleep, with all the implements of his work before him. Death near him touches him on the shoulder, and in his hand Death has a child, ready to take on the od man's work.

It is the children of to-day who will make the community of to-morrow. Thus can be seen the great importance of looking carefully after the children in order that they may grow up strong men and women without handicaps, prepared to take our places as soon as they must in the various walks of life.

Success and safety in life depend to a great extent upon the care of a child's eyes.

The increase in the number of young people suffering from eye-strain shows that much popular education is needed concerning the care of children's eyes.

New-born infants are very sensitive to bright lights either natural or artificial. They should not be subjected to a strong light for two or three weeks. A young child should never be allowed to face the sun, as this will cause the habit of squinting and may be productive of serious defects of vision. Nurse-maids who take young children out into the open should be thoroughly instructed on this subject.

In the bedroom and nursery neutral and dark tints should be used, but never white. If a white parasol is used over a carriage, it should be lined with a color, preferably green.

During such infectious diseases as scarlet fever, whooping-cough, and particularly measles, the eyes should be carefully protected. For the first few days have the room moderately dark, as at this time the eyes are abnormally sensitive to light. Hot compresses of boric-acid solution will relieve pain. During the convalescent period, avoid strain by use and keep the child on a low diet.

A young child should not be allowed to look at anything requiring close vision for a long time, as the so-called fusion of the vision develops very slowly in young children. It is not fully acquired until the age of seven to ten. If the eyes are used for close application before this time, it is apt to cause near-sightedness.

When school age is reached and studies are begun, the letters should be large and the lines short, with considerable distance between the lines. The periods for using the eyes should be short.

The child should be taught to hold his head up when reading and to hold the book from twelve to fourteen inches from the face. The habit of holding the book too close to the eyes is easily formed. This will cause a strain of the muscles both within and on the out side of the eyeball and is a cause of near-sightedness.

The mother should be careful to see that a child just beginning to study does not abuse his eyes by too long-continued use or by improper light.

Some of the earliest principles to teach a child just beginning to use books are: Never to sit facing the light but to let the light come from behind or over the left shoulder; to avoid books or papers printed indistinctly or in small type; never to read in the tiwlight or in a reclining position or with the sun shining directly on the book. In any close application of the eyes, teach the child the necessity for frequently resting them by looking away from the material or book and letting the eyes rest on distant objects.

There is nothing so restful to the eye as the foreground of Nature. It is painted in colors least apt to tire the eyes, and in viewing it there is a constant unconscious relaxation of the muscles of the eyes.

For this reason alone, and there are many others, the child attending school should never be deprived of his hours of play in the open after school-hours.

There are many children who need glasses at an early age. Even normal vision does not preclude eye-strain.

A medical writer on this subject has said: "Eye-strain is the more easily overlooked because it often accompanies perfect vision, and, paradoxical as it may seem, is much more likely to follow small errors than large ones. The one who has a very large error strains for clear vision, but after a time ceases because it is of no avail and is contented with limited vision, while the one with small error often continues straining because it enables him to see distinctly."

It is not unusual for eye-strain to cause reflex disturbances in distant parts of the body. During the early school age, should there be unusual restlessness, headache, irritability or gastro-intestinal disturbances the mother should think of the eyes as a possible cause.

The child who is near-sighted will be unable to see blackboards or other distant objects used in teaching. As near-sighted eyes tend to become worse if nothing is done to protect them, seriously impaired vision may be the result.

The far-sighted child suffers from headache in his efforts to see near objects and, unless relieved by glasses, not only will his health become impaired, but he is very apt to become careless and shiftless in his school work.

If a cross-eye should appear in a young child, he should be put into the hands of a competent physician at once, who will at once retract it. This should not be neglected as it is a question of preserving the sight in an eye that may otherwise become practically useless.

Pinkeye is a common infection among school-children. It is marked by redness of the eyes; a muco-purulent discharge and a feeling as if

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grains of sand were sticking under the lid.

This is highly contagious. The child should be kept from school and should not use the eyes as long as there is any inflammation present. Any article that may come in contact with the child's eyes should be strictly isolated to prevent its spreading to other members of the family.

This usually lasts from ten days to two weeks and terminates favorably. Apply cold compresses to the eyes in the initial stage and call in a physician.

When it is suspected that a child has imperfect vision consult a competent oculist.

This needs special emphasis, as there are many opticians and would-be oculists whose chief concern seems to be to sell glasses. Do not practise economy on the eyes by trusting them in the hands of an incompetent man.

HAVING REGARD FOR ANOTHER'S REPUTATION

Kindness brings peace and joy and if every person always tried to be kind the world would be truly improved. But we find many who do unkind things purposely, yet many times unthoughtedly.

It's unkind to criticise our neighbors for what they do. If we were in their places we would likely do just as they do. We would be doing them a kindness if we minded our own affairs for they can attend to theirs much better than we can. We can cheer our friends along life's way by a friendly deed, an encouraging word, and a smile. As we journey through life we find many obstacles which hinder our progress. Our friends find the same. Thus their lives are just as full of storm with occasional gleams of sunlight as ours are. We know by sad experience how trying some moemnts are, and how hard to bear are the cares these moments bring. Knowing this, we should pity, instead of finding fault with those who, we imagine, are making little effort to do what is right and just. Perhaps they think the same of us, and if we could see ourselves through the eyes of others, we would be sorry we did not try to correct our own faults before we thought of correcting those of others.

It is very unkind to speak untruthfully of another. A person who speaks untruths is much more to be feared, than one who covets our worldly possessions. Our good reputation is often ruthlessly torn from us by the person who cannot or will not tell the truth. Untruths spoken of innocent people have caused much trouble and brought so much unhappiness. Joy has been crushed out of many a singing heart because of careless conversation. And then comes the repeating, and each word is sometimes multiplied several times, until at last a mountain has grown from nothing. Christianity means much more than simply being a church member. To be true Christians we must follow in Christ's footsteps, which means that we must not gossip or tell untruths, nor stir up strife in the neighborhood.

It's so much kinder when entertaining or visiting a friend to discuss some interesting topic of the day, rather than spend the valuable time in enumerating some person's short-comings. Nothing is gained by evil conversation and time spent in fault-finding is lost. The priceless moments in which we might have accomplished something good have flown forever beyond recall. Many opportunities, golden opportunities, for doing kindness have drifted far into the unreturnable past.

Let us try to be kind to all. In so doing we will surely learn the true value of kindness.

A WHITE THROAT

So many girls complain that their necks are discolored! And men too—oh, in long letters, apparently quite surprised that they can keep a nice complexion so far as the face is concerned, but can do nothing for the neck.

And wouldn't they be surprised if I told them that the main trouble was just—dirt. And offended, too—I'm afraid they would never write to me again. Yet plain everyday dirt is the cause of most discolored necks.

Consider—the neck is almost as exposed to dirt as the face, yet is never washed as often nor as thoroughly. Besides, the collor rubs loosely against the skin and grinds in the dirt particles deep into the pores. Or colored material comes against the neck of necklaces, which collect and rub in a surprising amount of dirt—or fur, which is another dust collector and frequently full of dye.

Do you wonder, then, that the neck gets brown and homely? And all it needs is a little extra care and protection.

First of all, give it a washing with soap and hot water, and hold a hot, wet towel around it a moment, to open the pores. Then rub in a cleansing cream—this advice is for men as well as women—and rub the cream round and round till you have worked it well into the pores. And then wipe off on a soft clean cloth—and you'll be shocked at the amount of dirt that comes out. Also, you'll be pleased at the whiteness of your neck.

So much for care—this treatment should be given about twice a week, with a cold rinse or an ice rub to end with, so as not to catch cold. Using cucumber milk or lemon juice on the neck now and then will keep the skin creamy white, provided it is quite clean.

For protection—never let colored goods come against the neck. If you wear furs, wear a white collar over your suit or gown or even a chiffon scarf, to keep the dark fur away from direct contact with the skin. Wear a white or very light collar over your coat, so it won't rub or pull the collar of the waist out over it to protect the skin. If you're a man, well-fitting soft collars for general wear will be easier on the neck than stiff starched ones, and will keep the young lines of the neck for you.

If you're either man or woman don't wear high choking collars or collars that bind or restrict the neck in any way. These make the muscles flabby, and the neck wrinkled, and often hamper the circulation to such an extent that red nose results.

AFTER-DINNER MINTS

Two cupfuls of granulated sugar, two-thirds of a cupful of boiling water, one-third of a teaspoonful of essence of peppermint. Roll and sift sugar until very fine. Boil sugar and water till it makes a soft ball. Remove to pan of hot water. Add flavoring.

Take out a scant half teaspoonful at a time. Stir until it begins to look white. Drop quickly on oiled paper with a teaspoon, enough to make a patty about the size of a quarter, or pour into small patty-pans.

Have ready salted almonds cut squarely in half. Press into the center of the patties in upright position. The mint and almond made a delicious combination for after dinner.

WORTH KNOWING

When Corn Won't Pop

Pop-corn that will not pop is often too dry. If it is sprinkled with water it will pop quickly.

Opening Fruit Jars

To open fruit-jars without injury to the lid or rubber, place cans top down in tea-kettle of hot water for a moment.

Tar Stains Removed

To remove tar from linen or cotton, rub lard on spots, and a couple of hours later wash with naphtha soap.

Twice as Much Lemon-Juice

Place lemons in bowl and cover with boiling water. Let stand fifteen minutes. You will get double quantity.

Ashes for Scouring Pans

Fine ashes are excellent for scouring pans, also glasses stained from hard water.

Preventing Mold

Cut hams may be kept from molding if the cut end is wet with vinegar each time after cutting.

Paper Patterns

When opeing up new patterns, put the number of the pattern on each piece. It will frequently save much trouble in sorting patterns.

Two Layers for Biscuit

Your baking-powder biscuit will be better if you roll the dough thinner than usual, and use two cuts for one biscuit, laying one on top of the other. They will break open more easily too.

A Burnt Saucepan

Never put soda and water into an enameled saucepan that has burned, for though this will remove the burnt portions, it will also make the saucepan likely to burn again the next time it is used. Use salt instead of soda. Fill the pan with cold salt water, leave till next day, then slowly bring to a boil. The pan will be quite clean and there will be no bad after-effects.

Soap Scraps

All the scraps of soap, when too small to be used conveniently, should be put into a can, and covered with water. If cooked for awhile on the stove, this will make soft soap, very convenient for dishwashing.

Cracks in Wooden Floor

To fill cracks in wooden floor put one-half pound newspaper in three quarts water and soak three days. Then add one tablespoonful powdered alum and one quart wheat flour. Stir and boil until like cake dough. Cool and fill crack. It will harden like cement.

The Useful Corn-Popper

A corn-popper is very useful in washing any kind of berries, as it can be locked and the whole shaken in a pan of water without bruising the fruit. It is also good for toasting bread or broiling meat, its long handle keeping the face from burning.

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DR. FOWLER'S

EXTRACT OF

WILD STRAWBERRY

CURES

DIARRHŒA, DYSENTERY, COLIC, CHOLERA MORBUS, CHOLERA INFANTUM AND ALL SUMMER COMPLAINTS.

It is without a doubt the safest and most reliable remedy in existence.

It has been a household remedy for 72 years.

Its effects are instaneous and it does not leave the bowels in a constipated condition.

Make up your mind to insist on getting "Dr. Fowler's" when you ask for it. Don't experiment with some no-name, no-reputation, so-called strawberry compounds that tries to sell on the reputation built up by Dr. Fowler's.

The genuine is 35c. per bottle, and manufactured only by The T. Milburn Co., Limited, Toronto, Out.

Mrs. R. Armstrong, Nixon, Ont., writes:—"Some years ago I had diarrhœa until it became chronic. I doctored with a good doctor, but as soon as I stopped taking his medicine I was as bad as ever. I became so weak I could hardly walk across the floor alone. A friend told me of Dr. Fowler's Extract of Wild Strawberry, and less than two bottles cured me to stay cured. I think it is the best medicine for bowel trouble that can be procured."

POTATOES INSTEAD OF WHEAT

The Government has asked us to eat potatoes this Summer and less bread, because of the plentiful crop and because their starchy substance makes them a good nourishing wheat substitute. When plenty of potatoes are served at a meal. we can afford to omit wheat altogether, serving no bread at all. Here are a group of new and appetizing ways which will vary the monotony of boiled, mashed, and baked, and give a new touch to the menu.

Potato Waffles

2 cupfuls boiled riced potato, 1 cupful milk, 2 teaspoonfuls baking-powder, 1 cupful flour, 3 eggs, 1 tablespoonful melted butter substitute, 1 teaspoonful salt.

Beat eggs until light, add potatoes (which have been boiled, riced and allowed to cool), butter substitute, salt and milk, then flour sifted with baking-powder. Bake at once on a hot, well greased waffle iron. Serve with maple-sirup.

RELIEF AT LAST

I want to help you if you are suffering from bleeding, itching, blind or protruding Piles. I can tell you how, in your own home and without anyone's assistance, you can apply the best of all treatments.

PILES TREATED AT HOME

I promise to send you a FREE trial of the new absorption treatment, and references from your own locality if you will but write and ask. I assure you of immediate relief. Send no money, but tell others of this offer.
Address

MRS. M. SUMMERS, Box 309 Windsor, Ont.

Potato Soup

1 Pt. sliced raw potatoes, 1 to 4 small onions, 1 qt. water, 1 pt. whole milk, pepper, salt.

Slice the potatoes thin until you have one pint, add from one to four small onions sliced thin, to obtain less or more flavor as you prefer. Boil in water until tender, add the milk, and salt and pepper to taste. Serve hot. The potatoes and onions may be skimmed and rubbed through a colander if you like.

This makes a good soup for the children's luncheon.

Potato Pancakes

3 large potatoes grated, 1 egg, 1 teaspoonful salt, 1 small onion, grated, 3 tablespoonfuls flour.

After peeling the potatoes, grate them. Add onion, grated, salt (pepper may also be added if you like it), beaten egg, and flour. Mix well and drop by spoonfuls into good hot drippings and fry until golden brown on both sides. Serve with apple sauce. These make an excellent luncheon or supper dish for meatless day.

Cottage Potatoes

4 large potatoes, salt and pepper, drippings, 1 egg yolk, bread-crumbs.

Wash the potatoes and pare them. Put them on to boil and when half done, cut them in thin slices, dip them in the well-beaten yolk, to which has been added pepper and salt to taste, roll them in bread-crumbs and fry them a light brown in some good drippings.

Russian Potatoes

6 medium-sized potatoes, 1 small onion, water, 2 tablespoonfuls butter substitute, 2 tablespoonfuls sour cream, pepper and salt.

Wash the potatoes and pare them. Dice them and put them into stew-pan with just enough cold water to cook them slowly. They should not be covered with water. Season well with pepper and salt and add the onion chopped fine. Cover and simmer until tender but they should not become mushy. Add butter substitute and sour cream (more may be added if you like it), cover and shake the pan gently. Let stand a few minutes before serving. These are good made with old potatoes but are delicious made with the new ones.

Luncheon Potatoes

Medium-sized potatoes, butter substitute, salt and pepper, cheese.

Take a number of medium-sized potatoes, scrub them well and dry. Cut them in halves and spread each half with a little butter substitute, a sprinkle of salt and pepper and lay a thin slice of cheese and pepper aetaoilnuin slice of cheese on top. Place in a slightly greased pan and bake in a hot oven until soft and brown.

Soused Potatoes

24 small new potatoes, 1 large onion, salt and pepper, 1 lemon, 6 tablespoonfuls hot water.

Wash the potatoes well but do not pare them. Boil them until done; remove them from the fire before their skins break open. Peel and put in a large dish. Make a sauce of the onion sliced very thin, the juice of the lemon, salt and pepper to taste, and hot water. Some chopped green pepper may be added. Stir this mixture well and throw over the potatoes. Let them stand at least an hour and stir once in a while. Serve when quite cold.

Old Dutch Dish

6 potatoes, 9 apples, salt, 3 tablespoonfuls maple-sirup, ¼ lb. sliced bacon.

Pare the potatoes and quarter them, wash the apples but do not peel, core them and quarter them, and put in a stew-pan with just a sprinkling of salt, maple-sirup, and bacon. Cover with cold water and cook very slowly for three hours. The apples and potatoes should retain their shape and must not be allowed to cook to pieces. A fine dish for a camp.

Swedish Potato Balls

2 cupfuls mashed potatoes, salt and pepper, few gratings of nutmeg, potato flour, parsley, 1 teaspoonful butter substitute, 1 egg yolk, 1 tablespoonful grated cheese, white sauce.

Pare and boil the potatoes until tender, mash them and season well with salt and pepper, nutmeg and butter substitute; add beaten egg yolk and cheese and mix thoroughly. Mold into balls about the size of walnuts, roll in potato flour and drop into boiling salted water. Cook about 10 minutes, drain and put in a serving dish, pour white sauce over and top with a sprinkling of chopped parsley.

Savory Mashed Potatoes

6 medium-sized potatoes, 2 tablespoonfuls butte rsubstitute, 1 teaspoonful salt, 1 small onion, chopped, ¼ cupful cream or milk, few grains pepper.

Boil t hepotatoes, drain and mash, add butter substitute, cream or milk, salt, pepper, and last, beat in the chopped onion lightly. This will be found a great change from the ordinary mashed potatoes.

Stuffed Potatoes

6 medium-sized potatoes, 1 teaspoonful butter substitute, ½ cupful milk, 1 cupful grated cheese, salt and pepper, paprika.

Scrub potatoes and bake until soft. Cut them in halves with a sharp knife and remove cooked potatoes to a bowl. Mash and add the butter substitute, milk, ¾ cupful of grated cheese and salt and pepper to taste. Beat with a folk until light and creamy and refill potato skins. Dust the top with remainder of grated cheese and sprinkle with paprika. Return to oven until crisp and brown on the top. This makes a fine luncheon dish.

Potato Salad with Onion

4 ucpfuls sliced boiled potatoes, 1 small onion chopped, ½ cupful weak vinegar, 2½ teaspoonfuls salt, 1 hard boiled egg, pepper to taste, 4 tablespoonfuls salad oil, 4 stalks celery, 2 tablespoonfuls chopped parsley, sprinkling of paprike.

Put chopped onion in a bowl with salt and vinegar and let stand a few minutes; then slice potatoes while warm into this and mix thoroughly. Add oil, taking care not to break potatoes, celery cut fine with a sharp knife so there will be no strings to chew, pepper and 1½ tablespoonful of parsley. Mix well, cover and in a few hours mix thoroughly again. Cover and set in a cool place until ready to serve. Arrange on lettuce leaves on a platter and cover top with chopped hard boiled egg, the remaining parsley and a few dashes of paprika.

Potato Salar without Onion

1 qt. small boiled potatoes, ½ cupful vinegar, 2½ teaspoonfuls salt, 2 hard boiled egg yolks, water, 1 raw yolk, 1 tablespoonful celery seed, 3 tablespoonfuls salad oil.

Mix salt, vinegar and a little water while potatoes are still warm and slice them into this mixture. Do this right after breakfast, at noontime add the celery seed and mix gently through the potatoes, taste potatoes to see if they are salt enough, if not add salt to your taste. Cover and keep in a cool place until an hour before serving time, then prepare the following dressing. Mash the yolks of the hard boiled eggs until perfectly smooth then mix thoroughly with the raw yolk and stir until there are no lumps. Gradually add the oil and when well blended, pour over the potatoes and mix well. The recipe does not call for pepper but may be added if you like it. Serve on green lettuce leaves. This is a delicious salad and a boon to those who do not eat potato salad because they can not eat onion.

Potato Flour Sponge-cake

4 eggs, ¾ cupful sugar, 1 teaspoonful almond extract, ¾ cupful potato flour, 1 teaspoonful baking-powder, pinch of salt.

Beat the yolks until thick and lemon-colored; add a pinch of salt, almond extract, and the sugar gradually and continue beating until the mixture is very light. Add potato flour unsifted, then fold in the whites of the eggs which have been beaten to a stiff froth. The baking-powder goes in last and must be mixed in very carefully.

Always Had Headaches

LIVER WAS TORPID AND BILIOUS SPELLS BROUGHT SICK HEADACHES—LOST MUCH TIME, BUT IS NOW COMPLETELY CURED

Here is convincing evidence that however much you may suffer from liver trouble and consequent biliousness there is cure in the use of Dr. Chase's Kidney-Liver Pills.

Overeating is the most common cause of sluggish liver action. You lose your appetite, have distressing bilious spells, usually accompanied by headache and vomiting, the bowels become irregular, constipation and looseness alternating, digestion is upset and you get irritable and down hearted.

No treatment so quickly awakens the action of the liver and bowels as Dr. Chase's Kidney-Liver Pills. For this reason this medicine is wonderfully popular and has enormous sales.

Mr. Charles R. Tait, Newtown, N.B., writes: "I was nearly always troubled with headaches, and would often have to stop work for a day or two. I lost many a night's sleep every month with bilious sick headaches, and although I tried doctor's medicines, and also many other patent medicines, it was without success. When I had these headaches I would vomit, and could keep nothing on my stomach.

"I purchased a box of Dr. Chase's Kidney-Liver Pills from G. M. Fairwether, druggist, of Sussex N.B., and after taking one box I was so much relieved that I continued to take them until now I am completely cured. My advice to anyone suffering from sick headaches is to try Dr. Chase's Kidney-Liver Pills and be completely cured."

Mr. A. S. Mace, J. P., endorses the above statement, and says:—"This is to certify that I am personally acquainted with Charles R. Tait, and believe his statement in every way to be true and correct."

Dr. Chase's Kidney-Liver Pills, one pill a dose, 25 cents a box, all dealers or Edmanson, Bates & Co., Limited, Toronto. Substitutes will only disappoint. In sist on getting what you ask for.

Minard's Liniment Co. ,Limited.

Gents,—I cured a valuable hunting dog of mange with MINARD'S LINIMENT after several veternaries had treated him without doing him any permanent good.

Yours etc.,
WILFRID GAGNE.
Prop. of Grand Central Hotel.
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GENUINE DIAMONDS
CASH or CREDIT
Terms: 20% Down and $1–$2–$3 Weekly.
We trust any Honest Person
Write for Catalogue o-day
JACOB BROS., Diamond Imp., 15 Toronto Arcade, Toronto

Pour into a greased pan and bake in a modern over from 30 to 40 minutes. If you do not like almond flavoring, add the rind and juice of one-half lemon instead.

HOW TO MAKE YOUR BABY MORE PERFECT

Let us begin with the mouth. If it is habitually held open this will count against the baby. A baby will hold his mouth open if his nose is stopped up so he cannot breathe easily through it. Obstruction of the nose may be due to adenoids, large tonsils, lack of cleanliness or malformation of the bony parts of the nose itself.

To remedy this defect first see that you properly clean the nose daily. A young baby cannot blow his nose, so it must be cleaned out for him as part of the regular morning toilet, and again at bedtime if there is any difficulty in breathing. Make a small, soft cotton swab by twisting a little absorbent cotton on the end of a wooden toothpick, dip this into boiled water, olive oil or a little liquid albolene, and very gently clean each side of the nose. Do not use force, atomizers, etc., as substances are often forced into the tubes leading into the ears, and ear complications are thereby set up!

Older children should be taught to blow the nose thoroughly as part of the morning toilet, and again several times daily to keep the passages clear. Adenoids, large tonsils or malformations of the nose or mouth will have to be corrected by a physician.

Abnormal gums will count against the baby. If there are little white specks on the gums this may mean thrush or sprue and is due to lack of cleanliness, sucking a pacifier or to a run-down condition. To correct this be scrupulously clean about everything connected with the baby's mouth and nipples, and do not allow persons to "feel for teeth."

If the baby is not gaining well, or is anaemic or run down generally, find out the reason. Have the breast milk tested or the bottle formula changed, as the case may be.

Never roughly wash out a baby's mouth, as you will injure the delicate mucous membrane if you do, but take a small piece of absorbent cotton and twist it about your little finger or a wooden toothpick and dip this into a solution of one cupful etaoindzsoehIa solution of bicarbonate of soda (one teaspoonful of soda to one cupful of boiled water) and very gently wash the ums and inside of the mouth and cheeks wherever the little white specks are seen. This may be done every hour or two until the white specks disappear.

If the gums are very much inflamed and spongy and bleed easily it may mean a condition called "scurvy," especially if it is accompanied by painful legs; when the diapers are changed the baby may scream as the legs are handled. This often comes from lack of fresh food. In such cases give the baby row, certified milk, properly modified ,and also orange juice and beef juice several times daily.

Coated tongue and bad breath will count very much against the baby. Constipation, indigestion and catarrh may all cause coated tongue. Orange juice, prune juice, or oatmeal gruel with some form of malt sugar in the formula usually relieves constipation, or a teaspoonful of olive oil daily may be tried and training to regular habits at once started.

Indigestion may be relieved by castor oil, water to drink between meals or barley water just before a meal in case of a breast-fed baby. If bottle-fed, the formula should be changed to suit the special baby until digestion is no longer present and the tongue clears off.

Catarrh in a baby is usually caused by adenoids or large tonsils and these must be treated by a physician. If any teeth are present they must be kept very clean or bad breath will result in any case.

Deformity caused by pacifier or thumb sucking will score against the baby. To correct this stop the bad habit at once. I will tell you how to do this if you will write to me.

Delayed teething may count against the baby too. If you are feeding him correctly this is all you can do; but if not, then send for formulas or diet lists. Decayed, discolored or irregular teeth are all abnormal points. If decayed a dentist must attend to them; even the first set of baby teeth should be filled when necessary. If they are discolored, often a little powdered pumic stone, moistened and then rubbed on the discolored spots with a piece of cotton, will remove the stains.

Clean to handle. Sold by all Druggists, Grocers and General Stores.

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Mends Leaks in Graniteware, Tin, Aluminum, etc., in two minutes without tools. Saves a kettle for half a cent. At dealers or from us, 15 cents.
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Doing Our Bit

The most patriotic service we can render is to continue to fit young people to take the places of those who have enlisted.

There will therefore be no Summer Vacation this year. One of the principals and other senior teachers always in attendanace.

Students can enter a tany time.
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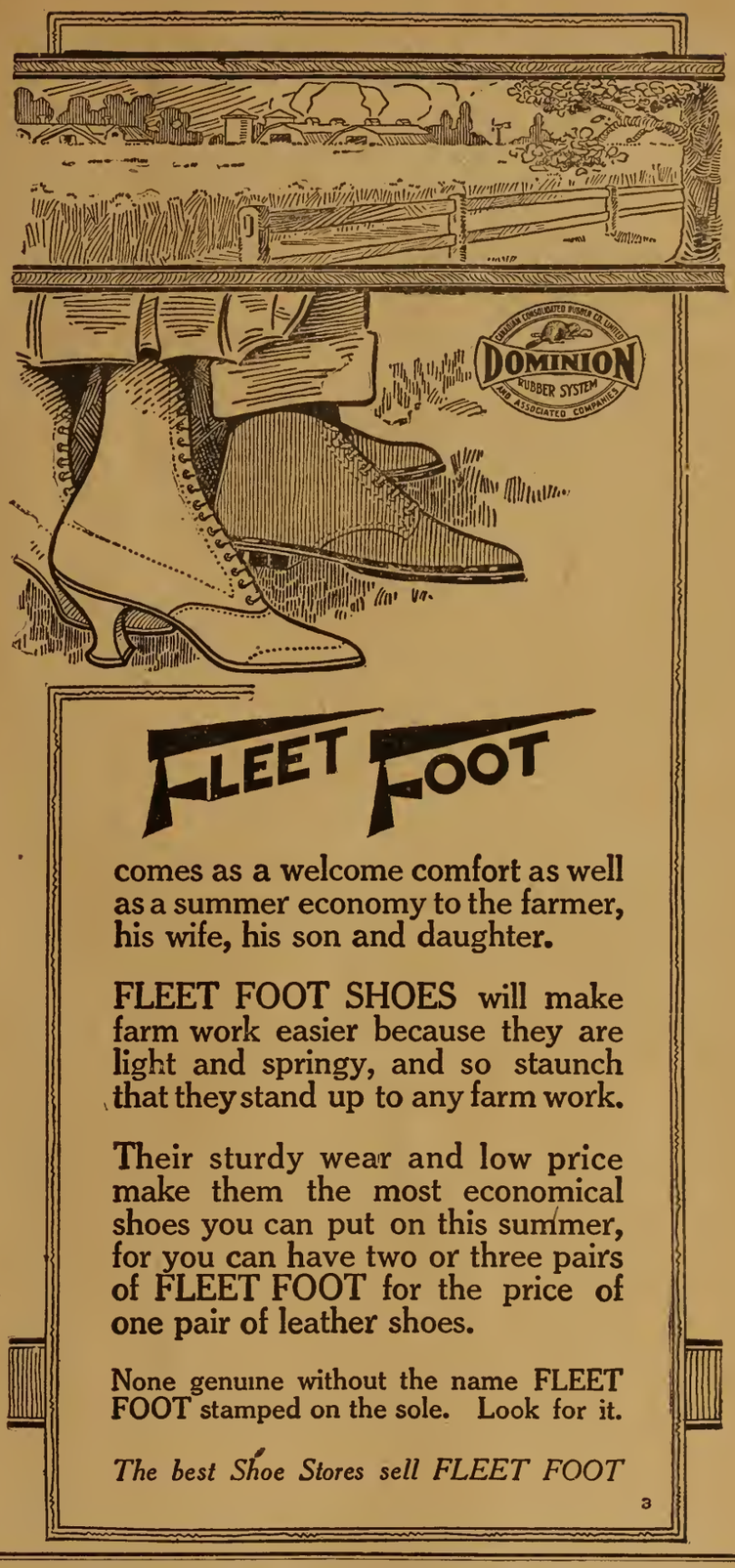

FLEET FOOT

comes as a welcome comfort as well as a summer economy to the farmer, his wife, his son and daughter.

FLEET FOOT SHOES will make farm work easier because they are light and springy, and so staunch that they stand up to any farm work.

Their sturdy wear and low price make them the most economical shoes you can put on this summer, for you can have two or three pairs of FLEET FOOT for the price of one pair of leather shoes.

None genuine without the name FLEET FOOT stamped on the sole. Look for it.

The best Shoe Stores sell FLEET FOOT

3

In Making Seedless Jam of blackberries, a great saving may be effected by passing the berries, which have been previously cooked soft, through an ordinary rotary flour sifter. In this way, with much less work and without staining the hands, every particle of the pulp can be separated from the seeds.

By Using Both Parts of Your Double Boiler while cooking a cereal you can save fuel. For instance, while cooking your dinner put beets in the lower part and oatmeal in the upper, thus cooking both with but one light.

Fruit Jars Bought by the Dozen come in heavy corrugated-paper boxes. Instead of tearing open the top at the joints, cut around three sides with a knife and you have a lid hinged on one side. As the jars are filled place them in this box, where they will be in the dark and protected to some extent from freezing. As they are emptied wash and put the lid back on again an return to the box bottom upward. A glance into the case then shows how many jars of fruit remain. When all are empty there are one dozen jars ready for storage until next season.

To Save Sugar when making jam or marmalade, add one cupful of apples, cooked fine, to one quart of fruit, and the jam will thicken with less sugar and less boiling and retain the flavor of the fruit better.

A Very Useful Contribution to the boy going away would be several pillow slips made of khaki cloth or denim, eighteen inches square, the open ends hemmed and finished with snap fasteners sewed on at two-inch intervals. These can be carried flat, taking up no room at all and filled with straw or newspapers at each place he stops.

MARKETS.

MONTREAL

Dairy Produce Trade

The receipts of butter today were 146 packages, as compared with 140 for the same day last week, and 86 for the corresponding date a year ago. There was no important change in the condition of the market to-day, prices being steady, with a fair amount of business passing, there being still some demand for round lots from local buyers for storing purposes for future requirements, and it is also reported that sales are being made in other directions. A fair trade in a wholesale jobbing way was done and prices were unchanged, with sales of finest creamery at 46c per lb. in solid packages, and at 47c in 1-lb. blocks. Oleomargarine is steady with a fair demand for small lots for the season at 31c to 32c per lb.

We quote wholesale prices as follows:

Finest creamery.....43¾c to 44c
Fine creamery.....43¼c to 43½c
Finest dairy.....38½c to 39c
Fine dairy.....37c to 37½c

The receipts of cheese today were 11,048 boxes, as against 6,443 for the same day last week, and 6,003 for the corresponding date a year ago. At the meeting of the Peterboro board today 1,743 boxes of cheese were offered, for which there was a good demand, and all sold at 22¼c per lb. f.o.b. The make in that district for the first half an second half of July was also offered and sold at the same price, and the board adjourned for five weeks. The local trade in small cheese for home consumption was steady and sales of 20-lb. cheese and twins were made at 22¼c to 22½c per lb.

The Dairy Produce Commission is paying the following prices:

No. 1 cheese.....38c
No. 2 cheese.....22½c
No. 3 cheese.....22c

Country Produce

There was no important change in the condition of the market for eggs today, prices being firmly maintained with a good steady demand for small lots, and an active trade was done in a wholesale jobbing way. The receipts today were 1,498 cases, as compared with 634 for the same day last week, and 761 for the corresponding date a year ago.

We quote wholesale jobbing prices as follows:

Seected new laid eggs..... 50c
No. 1 stock.....46c
No. 2 stock.....41c to 42c

An easy feeling prevails in the market for potatoes on account of the more liberal supplies coming forward and the prospects are that prices will go lower in the near future, but there was no actual change today. The demand continues fairly good for small lots to meet immediate wants and sales of No. 1 Red Stars in a wholesale jobbing way were made at $7.25 per barrel, and No. 2 at $5.75 ex store, while old crop Quebec white potatoes sold at $2.65 per bag of 80 lbs. ex store.

The condition of the market for maple product was unchanged, prices being firmly maintained on account of the limited supplies now available. The demand for maple syrup was slow and in a wholesale jobbing way prices were quoted at $1.90 to $2 per gallon in wood, and in one-gallon tins at $2.10 to $2.25. There is a fair enquiry for maple sugar for shipment to the United States at 22c per lb. f. o. b. country points, and at 23c per lb on. spot

The Local Grain Market

A feature of the grain trade today was the decidedly strong feeling in the market for Manitoba barley, and prices scored an advance of 6c to 8c per bushel, which was attributed to the increased demand for supplies and the small offerings, and sales of some fair-sized lots of rejected, feed and sample barley were made on spot at $1.38 per bushel for the two former grades, ex-track here, and at the close of the market sellers in the West were asking equivalent to $1.41. In sympathy with the continued strength in the Winnipeg option market for oats a stronger feeling prevailed in the local market for cash oats, and prices were marked up 1c per bushel. There was no improvement in the demand, and business was quiet, with car lots of No. 2 Canadian western quoted at $1.02, No. 3 C. W. at 99c, extra No. 1 feed at 99c, No. 1 feed at 96c, and No. 2 feed at 93c per bushel, ex-store. According to advices from Chicago there has been a large export trade in oats of late and shipments of 1,000,000 bushels have been made within the past week, mainly via lake to Georgian Bay ports. The local market for American yellow corn was weaker and prices for this grade were reduced 5c per bushel to $1.85, but sample grades were steady at from $1.32 to $1.67½ per bushel, ex-store.

The Local Flour Market

A stronger feeling has developed in the market for rye flour, and prices for American grades in car lots have advanced $1 per barrel to $12.60 per barrel, in bags, ex-track. This is attributed to the increasing scarcity of the raw material, and the fact that prices of late have scored advances amounting to 23c per bushel. In sympathy with the above, the small offerings on spot of all grades of rye flour and the good demand for broken lots, prices today weer marked up 50c per barrel, with sales at $14 to $14.50 per barrel in bags. A stronger feeling has prevailed in the market for barley flour and prices are 50c per barrel higher, with a good demand at $12.50 to $13 per barrel in bags. The enquiry for oat flour is large, but on account o fthe fact that there is very little available on spot as yet, the volume of business is checked, and prices are firm at $12.80. Buckwheat flour is selling at $14.50, and corn flour at $12 per barrel in bags, while rice flour is also moving fairly well at $8.75 per 100 lbs., put up in 220-lb. sacks. There was quite an active demand for winter wheat flour today, and all offerings met with a ready sale at $11.40, per barrel in new cotton bags, and at $11.10 in second-hand jute bags, ex-store. There was no change in the marekt for spring wheat flour, for which the demand was steady, and sales of car lots for city account were made at $11.05 per barrel in bags, delivered, and car lots for shipment to country points were quoted at $10.95, f.o.b. Montreal.

Millfeed and Rolled Oats

There were no new developments in the market for millfeed, prices for all lines being firm, with a good steady demand for all offerings, and sales of feed cornmeal were made at $68, pure barley feed at $61, mixed moullie at $51, shorts at $40, and bran at $35 per ton, including bags, delivered. There was much better demand for broken lots of rolled oats for both local and country account, and the market was active, with a firm undertone. Sales of standard grades were made at $5.20 to $5.30 per bag of 90 lbs., delivered. A good business continues to be done in corn-meal and the tone of the market is firm, with sales of Golden grade at $6.25 to $6.40, and bolted grade at $4.50 to $4.75 per bag, delivered.

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TIRES
AUTOMOBILE
DUNLOP SPECIAL TREAD
DUNLOP TRACTION TREAD
A Good Sign
The "Traction" or "Special" mark is on every pavement and road in every portion of Canada. ¶ Either mark is the sure sign that all is well ahead.
Your Garageman Stocks Dunlop Tires.
A. 86

SUNFLOWER SILAGE

Experiments with sunflowers to determine their suitability for silage are being conducted in the western United States by the Bureau of Plant Industry, in co-operation with state experiment stations. There are indications that this crop may be specially useful in regious where the growing season is too cool for the production of large yields of silage corn. The experiments were begun in 1917 at Huntley, Montana, and Scottsbluff, Nebraska, and thefirst year's results led the investigators to extend the work to other points this year.

In 1917 the yields of sunflower silage exceeded those of corn silage in the same fields from 5$ to 100 per cent. Yields of more than 20 tons per acre were obtained under irrigation. Preliminary feeding tests have indicated that the sunflower silage may be substituted satisfactorily for corn silage, but directly comparable results have not yet been obtained in sufficient volume to justify a full statement as to the comparative values of the two feeds.

ARRANGING WINTER QUARTERS FOR THE SOW

Several factors should be considered when arranging winter quarters for the sow, namely,—dryness, ventilation, draughts, light, warmth and exercise.

Dryness is desirable at all times, but especially so in winter. Damp pens and moisture laden air are conducive to rheumatism, colds and bronchitis and tend towards the general lowering of the sow's vitality. Good ventilation not only supplies fresh air, but also helps to reduce the moisture. Draughts are dangerous, resulting in colds and kindred diseases. An abundance of light is an important requirment since it has a great influence in promoting good health. Warmth is not absolutely essential. Hogs can stand a great deal of cold provided they are in dry quarters and not exposed to draughts. Exercise is of great importance, being conducive to general vigor and health and tending to keep the sow's feet and legs free from various troubles.

There are several possibilities in solving the housing problem. At Macdonald College portable cabins have been used with success. These cabins are constructed with air-tight walls and are banked around the bottom. A ventilator at the apex of the roof removes all bad air. A small door is always open, the cabin being placed so that the door is facing South. Two or more sows, depending on size, are allotted to each cabin. Feed is supplied at some distance from the pen so that the sows are forced to take a certain amount of exercise.

Probably the most ideal method of wintering a sow is to give her the run of a barnyard in which there is a straw pile or a pile of horse manure. She will be certain to take sufficient exercise under these conditions. A portable cabin may be placed in one corner of the yard to serve as a sleeping pen. Other arrangements may be made to provide sleeping quarters depending on the location of hog pens and other buildings. In any case the pen should be free from draughts, dry, and well supplied with dry bedding. It is well also to bear in mind that a number of sows running together will do better and be more contented than if left singly in small pens.

A. E. MacL.

A dairy bull differs from the beef bull in the purpose for which he has been bred. The aim of the breeders of dairy cattle has been to increase the production of milk and butterfat among the individuals of the various breeds. To obtain this, the form or type of the animal had to be changed and made to correspond to the work the animal had to do. The reason why we have the dairy type so well established is because we have found more profitable milk production to accompany this type.—Fred W. Merrill.

Ne perfectly successful method of absolutely freeing cows of the germs of contagious abortion has yet been discovered. "Disinfecting cows" simply means the daily or frequent flushing out of the vagina with lukewarm water containing 30 grains of permanganate of potash to the gallon or some other solution preferred by the veterinarian who may also properly cleanse and disinfect the womb just after an abortion.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on. as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE:—Several litters of good registered Berkshire pigs farrowed in June. J. R. SEMPLE & SON, Truro, N. S.

FOR SALE—Registered Ayrshire bull, No. 48032. Dam 31884 C.R.R. Also several registered bull calves.—E. CHADDECOTT, Monkham's Farm, West Merigornish, Pictou Co., N. S.

WANTED—Lime Cask Hoops, Kiln Wood, Cask Heads. Right prices paid for good stock. Apply GANDY & ALLISON, 3 and 4 North Wharf, St. John, N. B.

FOR SALE

Pure bred registered Percheron stallion, rising five years old. He is a first-class individual, a sure stock getter and will stand inspection anywhere. A bargain if taken at once.

A. S. HINGLEY,

Prince Str. House, Truro, N. S.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

McINTYRE BROS.

SUSSEX, - - N. B.

CHESTER WHITE PIGS FOR SALE

Have 4 female pigs for sale, born June 29th, ready for delivery Aug. 10th. Sire, Maple Leaf Jack, reg. No. 15901, bred by W. E. Wilson, Merrickville, Ont. Dam, Margarite, reg. No. 16404, bred by F. W. Nixon, Lower Brighton, N. B. Sire of dam, Elmwood Elmer, reg. No. 12448, bred Mrs. E. D. George and Sons. Dam of dam, Elmwood Ida, reg. No. 12447. Breeder of dam of dam, Mrs. E. D. George & Sons. The above pigs are big growthy fellows in a litter of 6 and will be sold for $8.00 each, price to include reg. F.O.B. at our station, McKenna, N.B.

FRANK K. BROWN,

Lower Brighton - - - - N. B.

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Barred Rocks, White Wyandottes, White Orpingtons, White and Brown Leghorns, White Crested Black Polish. Choice breeding stock from good laying strains for sale. Cockerels, $2.00 each. Special prices on pairs, trios and pens during Aug. and Sept.

H. M. McMONAGLE

FREDERICTON - - - N. B.

EGGS FOR HATCHING !

Breed Standard bred poultry and more of it. Eggs or stock from every popular variety can be had through our Association.

Eggs from all heavy breeds such as Bramahs, Plymouth Rocks, Wyandottes, etc., $2.00 for 15 eggs.

Eggs from the lighter breeds such as Leghorns, Minorcas and Black Spanish, etc., $1.50 for 15 eggs.

Write us your Poultry wants.

Cumberland Co. Poultry & Pet Stock Association

E. F. McKIM, Secretary

Amherst - - N. S.

Advertise it in the Farmer.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T. D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N. B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B.

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Cbaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son. Chipman Corner, Kings Co., N. S.
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Our present offering is one pure bred Shorthorn Bull, 11 months of age, also a few Heifers from one to three years of age. All of good milking qualities.

Beef, Hay and Potatoes in car lots.
Choice Cultivated Strawberries a specialty

FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
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Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,

New Mines - - - N. S.

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Rabbitry and Poultry Yards

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Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair. $25.00
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The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each. D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for hatching.....$2.00 per 15
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AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,

AMHERST, - - - N. S.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,

Truro, - - Nova Scotia

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

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Stationary or Mounted

An Engine for Every Need

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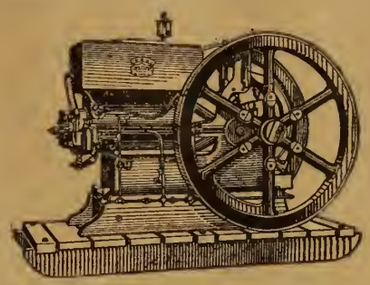

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FARMS FOR SALE !

1. Desirable farm for sale, situated at Lower Gagetown, N. B., containing 100 acres or thereby, suitable for growing all kinds of crops; there is a splendid orchard on the property, containing about 500 apple trees of good commercial varieties.

The farm buildings are commodious and exceptionally good and there is ample water supply. Public wharf about one-half mile distant and railway runs through the property.

2. Farm with suitable house and buildings, situated about 3 1-2 miles from Gagetown, extending to about three hundred acres, about one hundred of which is good cropping land, the balance containing a large quantity of valuable pulp and firewood.

For further particulars apply to

JOHN MIEKLEJOHN, Agent

Crosser Farms, - Lower Gagetown, N. B.

FOR SALE !

In Shorthorns we have to offer a number of roans, reds and whites in both males and females, from young calves up. It would pay those wishing to purchase to come and see our stock before doing otherwise.

Our spring litters of Berkshires are all sold. Are expecting several summer and fall litters. Parties wishing to purchase please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

FRUIT PACKAGES

The fruit season is again drawing near, how about your boxes and crates for the coming season To pack and ship to the best markets, you require the best standard packages, which can be had by placing yopr orders early with the

Hantsport Fruit Basket Co'y.

HANTSPORT, N. S.

HORSE PASTURE SAVES LABOR

The saving in labor is one of the prominent advantages this year of a convenient pasture for horses. Where the horses can be turned out at night in a small pasture adjoining the barn no time is lost going after them in the morning. The horses keep cleaner on pasture than in the stable, and there is no bedding to be hauled in and very little manure to haul out. If water is in the pasture the horses drink during the night, so there is less time spent waiting for them to drink in the morning.

Every few minutes saved in a day count up to worth-while totals this year. The time-saving may easily over-balance any detrimental effect of the pasture in making the horses soft. By this time grass is hard enough to be more suitable than in early spring. The nights are beginning to get hot, and this is an additional reason for getting the horses out of close, stuffy stables as much as possible.

Fairbanks
Wagon Scales

are the practical heavy load scale for the farm as well as for contractors, builders, hay and grain dealers or coal merchants. Fairbanks Wagon Scales are simple, accurate and fill every weighing requirement in

Capacities 5 and 10 Tons

Every Fairbanks Wagon Scale may be fitted with a Compound or Columbia Grain Beam, adaptable to graduations and standards required by the purchaser. Platforms are of steel frame construction and vary from 8 x 14 ft. to 7 ft. 11 in. x 22 ft.

Fairbanks Pitless Wagon Scales

are the accurate scales for use where a pit is undesirable. Height of scale nine inches. This is an ideal outfit for farm, contracting and quarry use. Capacity 5 tons. All prices are exclusive of timber and foundations. Write our nearest branch for full particulars.

The Canadian Fairbanks-Morse Co., Limited

St. John Quebec Montreal
Ottawa Toronto Hamilton
Winnipeg Calgary Windsor
Saskatoon Vancouver 76

DRYING—THE EASIEST WAY TO SAVE FOOD

(Continued from page 645)

storeroom. To avoid mice and their depredations, tie the boxes or paper bags to a long wire and hang the wire from a rafter. If you have jars, the moisture problem does not exist and they can be placed anywhere. But beware of stringing up bags with ordinary twine. My first year of drying I was a novice in the ways of mice and I tied up a very nice lot of pop-corn in the old-fashioned way that is so picturesque, knotted on twine so that it hung in bunches. It looked very well and evidently the mice admired it, for they shinned down my twine and got a good feast before I discovered the fact. Use wire; mice do not seem abie to walk that.

To prepare dried foods wash them first. I prefer to pour boiling-hot water over them and wash them quickly. Then I soak them for at least eight hours, preferably over night, as that gives a twelve hour soak, and then cook in the same water in which they are soaked. This helps to retain the flavor. The one exception to this rule is beans. They taste better if the first water is poured off, although young, tender string-beans do not always need a second water.

BERNARD FRICTION PULLEY

THE PULLEY WITH A REPUTATION

When buying your engine, insist on having same equipped with a reliable, powerful and simple friction pulley. Specify Bernard's and satisfaction. It is the best at a lower price.

Made in Canada by

THE A. BERNARD INDUSTRIAL CO.,
FORTIERVILLE, QUE.

Corn, which is one of the most difficult vegetables to can, dries easily, To get a good flavor, take young, tender corn and boil in salted water on the cob (with silk and husk removed) for fully five minutes. Cut the corn from the cob and put it on racks or into roasting or frying pans. A layer of an inch and a half seems to dry all right if it is stirred occasionally. Stand the corn in pans in the oven with the door open. The oven need not be very hot, not over 200 degrees. A sour smell will soon fill the room. Wait until this odor is practically gone and then remove the corn, spread on racks or on a sheet, and dry in the sun, taking it in at night and keeping it out from three days to a week. In 1916 I had a lot of extra corn in the garden which I had no time to can. I picked and sold four hundred ears and then found I had three hundred of what I call "nubbins"—small ears that are not salable. I dried these by this method and I am still using the dried corn. All that I have done to it meanwhile is to give it an annual reheating in the oven.

Salting Down Vegetables

Several of my neighbors prefer salted vegetables to any other kind. These have the advantage of ease in preparing. In fact they are easier than dried vegetables and they taste differently from fresh, dried or canned vegetables, giving a new flavor to add to the diet. I do not mean by this fermented salting, such as is done when cabbage becomes sauerkraut, but plain dry salting without fermentation. Beans lend themeslves easily to this form of food preservation. In two hours one year I packed more string and wax beans than we could use in a Winter. The beans are gathered w,ashed and cut into inch long pieces. For my salting I purchased an empty lard bucket, washed and sunned it well and then packed the beans and salt in layers, using 1 pound of salt to every 4 pounds of beans. The salt should be sprinkled between inch layers of beans. When the keg was nearly full I covered it with a little extra salt and a clean white cloth which hung well over the edges. Then I made the original lid of the lard bucket small enough to sink into the bucket about half way and put it on the cloth. On top of the lid I laid a large stone. I did nothing more and the beans kept all winter. But I am told by the scientists that after twenty-four hours I should have raised the lid and weight and have found brine on the surface which I should have covered with melted paraffin. This prevents the ntrance of air and consequent mold. I am going to do this with my next salted vegetables, for some corn I salted did mold and although it did not spoil much of the corn I might have kept it all.

To prepare corn for salting, remove the husks and silk and boil on the cob—10 minutes if it is young corn, 20minutes if it is old. Cut off the cob and pack in the same way as the beans, using 1 pound of salt to 4 pounds of corn. If you do not want anything as large as a lard-keg, an empty candy bucket, purchased for five cents from your grocer, is a good container, or any crock which is porous. The top should be covered with melted paraffin after the corn is covered with brine and there is no bubbles. If a brine does not cover the corn at the end of 24 hours, add a brine of 2 parts salt to 1 part water and when this stops bubbling pour in the paraffin.

Peas, dandelion, beet-tops, spinach, chard, kale and green peas may be salted in this way. My salted corn had an odd flavor much like lye hominy. It was odd but palatable, and we all ate it. Salted vegetables need soaking long enough to remove any surplus salt and they can be cooked just as fresh ones.

There is one other discovery I made last year which I should like to pass on to those of my readers who are gardeners. One of the easiest vegetables to dry is the Lima bean, which can be dried right on the poles where it grows. I usually heat the beans in the oven after collecting them as a protection against insects or there eggs which may be there invisible.

Certainly with every particle of food needed, drying is a method of preservation worthy of attention. Many a city woman or small-town woman could buy up her green grocer's oversupply in the evening, prepart it, put it on her drier in her oven (with the pilot-light anad the door open) and go out secure in the fact that the product would take care of itself. Not every one has energy enough to can a surplus in the evening and it is just this wasted surplus that sends prices shooting up in the winter. The woman who ha her own garden can make use of her daily surplus in this way, drying it in the oven in racks by night and in the sun next day.

Make Your Fence Posts Last 20 Years

by using

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Grade-One Liquid
Creosote Oil

Government tests have proved that soft woods treated with pure, high-grade creosote oil have greater durability than untreated hardwoods.

Barrett's Carbosota is a strictly pure creosote oil of the finest quality. It has marvelous penetrative and preservative powers. It more than doubles the life of all kinds of posts, fencing, sills, and other outdoor lumber. It resists dry- and wet-rot and the attacks of all kinds of fungi and insects. It is very easy to apply, either by the brush treatment or by a simple open-tank method.

Get a can today and prove it for yourself.

Insist that your dealer furnishes Barrett Brands.

Descriptive booklets sent upon request.

THE BARRETT CO., Limited

(formerly the Carritte-Paterson Mfg. Co. Limited)

ST. JOHN, N.B. HALIFAX, N.S. SYDNEY, N.S.

Ad. No. 8

THE VALUE OF LITTLE REPAIRS

(Continued from page 649)

worth more and greater pleasure will be derived from the friendly visitor who periodically calls and views the trim and neat farm homestead and be-

A NECESSITY on the FARM

YOU need a Bicycle NOW as never before. Help is scarce. Feed for the horse is dear. The most sensible and the cheapest means of getting there and back is a "C.C.M." Bicycle—the best that money can buy. Useful in a thousand ways on the farm. No cost for upkeep.

Write to-day for Catalogue H Canada Cycle & Motor Co., Limited, 427 St. James St., Montreal.

C·C·M MADE IN CANADA

This Mark is Your Protection.

Every "C.C.M." Bicycle bears this design on the rear upright.

Look for these Nameplates when choosing a Bicycle. All of these well known lines are "C.C.M." Bicycles. 2-E

Twice as easy as walking-Three times as fast

longings. It makes life worth living, and goes a long way to raise the standard of country life.

The Art of Fixing Up

Just before the blistering heat of June and July sun, a little paint given to the repaired building will add a new charm to the attractiveness of the farm. It also adds far more value than the initial expense of the work.

Nature has given the farmer the means of decorating his home with trees, plants and flowers, but art is called in to give the finishing touches, and painting is not the least of the artful efforts. Trees and flowers are out of place where they environ, lean-to and tumble down buildings, but this combination is seldom seen, for the farmer who has no interest in beautifying his home has little interest in either paint or flowers. This is not a time when the culture of flowers can be ardently advocated, but it is not out of place to call attention to the painting of sunburned buildings. There is utility, economy and production in the procedure.

True, it takes time and time is precious in Springtime, but have the will and a way will be found to execute the work.

A dollar spent in paint will save nine dollars in boards, for lumber is going up in price by leaps and bounds. After the war, we hear it said that prices will fall. This may be true of some things, but not so of lumber and steel. Hundreds of millions of dollars worth of lumber and steel are annually being swallowed up and destroyed in war's carnage, and the supply of raw material in these lines is not by any means inexhaustible.

Buy a can or two of paint and utilize every spare moment to get it spread on the home, the barns, their doors or windows, or wherever required, and you will find in the near future that you have been saving money and conserving power for your industry. Do not slight the idea that real wastefulness results from lack of the use of paint. A saving of material is so much added to the profits and painting increases the profits by prolonging the life of the material.

How to apply the Paint.

To make a good job, paint should not be used in damp weather, nor on wet wood work. When the wood is dry it absorbs more of the paint; the paint penetrates deeper into the wood and therefore gets a firmer hold on it and si more effective. Use a brush three or four inches wide for large surface painting. Begin at the top and paint downward. Keep the paint a uniform color and consistency by stirring occasionally. Give the first coat sufficient time in which to dry before applying the second coat.

On the quality of the paint and the quality of the work depends the number of years it will last. Good lead paint properly put on and given three coats will last for seven years. The side of the building exposed to the rays of the sun requires to be painted more often than the sheltered side. Economically, there is no more important factor around the farm than that of paint. The springtime keynote is paint, and the last refrain is paint. Catch it up and let it resound through the land.

IMPERIAL SERVICE

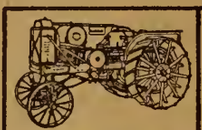
If you are in doubt about the proper lubricant, *ask the Imperial Oil man.* He will give you courteous attention and sound advice on your lubrication problems. That is part of Imperial Service.

CALL AT HEADQUARTERS

WHEN you add a new machine to your farm equipment—a tractor, a stationary engine, a drill, a thresher—no matter what the machine, you need dependable lubrication advice. You want to be sure the oils you use will maintain your machine in constant service and give it long life. Look to us for the answer to your problem. We know the oil you need for each particular purpose. We know the lubrication requirements of every farm machine. Our chief interest is to do away with lubrication troubles, to make sure that you are using the correct lubricants.

All our oils are supplied in steel barrels and half-barrels—convenient, economical. No waste. You use every drop you pay for and you know every drop is uniform and clean.

A Correct Lubricant for every Farm Machine



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STANDARD GAS ENGINE OIL

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POLARINE OIL HEAVY

IMPERIAL KEROSENE TRACTOR OIL

(Recommended by International Harvester Co.)

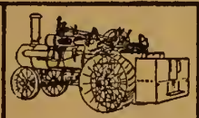
For Open Bearings of Farm Machinery

PRAIRIE HARVESTER OIL

—very heavy body, resists cold, won't thin out with moisture

ELDORADO CASTOR OIL

—a thick oil for worn and loose bearings



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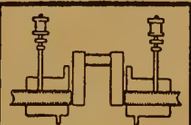


THRESHER HARD OIL

For Grease Cup Lubrication of Bearings

a clean solidified oil high melting point

IMPERIAL OIL LIMITED

BRANCHES THROUGHOUT CANADA

WATER FOR THE WORKING HORSES IS IMPORTANT

A surprising difference in heat resistance could be noted among farm teams during the recent very hot days. On some farms the horses worked right along without let-up; on others they appeared fagged and they evidently suffered from the heat. One of the conditions commonly present where the teams worked well was adequate provision for watering the horses. The water was pure, cool and plentiful. Generally it was offered frequently. In many cases the horses had free access to water during the night.

When weather is very hot a horse at work sweats out of his body a great quantity of water during the day. It is impossible to drink enough at the usual four waterings a day to fully replenish the water content of the body tissues and organs. As the hot day draws to a close the hard-working horse gets more and more in need of water throughout the body. He craves it. When he comes in at night, tired and thirsty, his capacity for holding water limits the amount that he can drink long before a balance between water and solids in the body is re-established. Perhaps the driver drags the thirsty horse away from the trough before he is through drinking because he fears too much water will be taken in and a case of colic be the result. Another chance to drink is planned, but perhaps forgotten. More frequently the horse is taken away from the water tank too soon because his pause in drinking to catch his breath and allow the water the pass through his stomach is mistaken for the signal that no more water is wanted.

In well regulated city stables this difficulty is overcome by watering the horses again after supper. This is seldom done in the country unless the horses are turned out for the night. Really it is better for the horses to turn them out where they can drink at will during the night. They are wonderfully refreshed by this practice just as men are refreshened by the long draughts of water that are taken several times after quitting the field on a very hot day, winding up with two or three glasses of water just before going to bed. Even where horses are not pastured at night they derive great benefit from resting and eating their hay in the barn lot with access to water. In a lot not too small there is not much danger of tired work horses injuring each other in summer. Many outfits spend the nights thus during early summer, and after about this time of year or a little earlier, when the grass gets more mature, they are turned on to pasture at night. The plan works well.

In very hot weather, particularly at harvest time, some of the most efficient farmers haul a barrel or two of water to the field and the horses are watered once or twice during each half day. Those who follow this plan assert that the horses will then do far more work in hot weather than if watered only morning, noon and night. Some accounts are related of marvellous endurance and big days' work accomplished under excessive heat by horses that had water given them frequently during the day. The only objection to it is the inconvenience. But then it is inconvenient for any one or any horse to work in the hottest days, so we might as well accept as desirable any means of accomplishing results and safeguarding the health of teams.

It is not thirst that allows a horse to be overcome with heat. It is a weakened condition of the system. Too ittle water is a common contributing cause to this decrease in vitality. A horse, like a man, craves water more than anything else in hot weather, and that of itself should be sufficient proof of the importance of plenty of pure fresh water.

Recruiting Officer of Crack Regiment—So you wish to join the corps, do you? Had any military experience?

Knut—Oh, yes; worn a beastly wrist watch for two years, don't you know.

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and Breeders, Clydesdales, Dairy Shorthorns and Border Leicester Sheep. A number of choicely bred animals for sale

G. C. Cossar, Prop. J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls, ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. S. Bloomfield Farm

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm

OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Shorthorn Cattle !

High grade registered stock for sale.

J. E. HETHERINGTON,
CODY'S, - - - N. B.

GUERNSEY BULLS!

I offer for immediate sale, the Guernsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

FOR SALE

Best English Blue Orpingtons, beautiful rich blue birds, three dollars fifteen eggs ($3.00). Handsome Buttercups, prize matings, fine birds, $2.00 fifteen.

SARAH E. MOSES SMITH,
WOODWARDS COVE, - - N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

For Milk, Butter, Cheese, Veal, Holstein Cows stand supreme. If you try just one animal you will very soon want more. Write the

Holstein-Friesian Association
W. A. Clemons, Sec'y, St. George, Ont.

FOR SALE!

Present offering, one Bull Calf.

P. R. L. FAIRWEATHER,
Rothesay - - - N. B.

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

JERSEYS

Young Bull, solid color, dropped Sept. 1st, 17 Out of R.O.P. dam and by a noted sire—combining the blood of Golden Lad, Tormentor and Flying Fox.

SHORTHORN:—

2 Young Bulls—One dropped Jan. 22, 1918, of the purely milking type, out of a great milking dam and by a Champion sire in his class.

The other dropped April 2, 1918. Splendid specimens of beef type. Out of very large and blocky dam and heavy sire.

Both these calves are mostly red in color and in show condition.

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

Maple Green Farm Holsteins

Just now we are offering some fresh calved cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. butter in 7 days.

Herd sires in service, "Maple Grove Mercena Mercedes," No. 11727, the sire of our 26.54 lb. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter brother to our 25.05 lb. Jr. 3 year old.

For particulars write

R. L. HICKS
Dalhousie Jct., - - N. B.

ROSEWARNE
S.C. White Leghorns

I am now booking orders for baby chicks and hatching eggs from my well known bred-to-lay strain. Chicks will be very scarce this spring, and there will be a wild scramble later on for supplies, so get your order in early and pick your date.

My cockerels and pullets, out of same matings as day-old chicks were sold from last season, swept the board at Halifax.

Send for prices and mating list.

ERNEST CRAZE
Port Williams, - - N. S.

GLENRANE STOCK FARM

We are offering some very fine pure bred registered calves from 2 weeks to 8 months old These calves are sired by "Homestead Hengerweld Rooker" ¾ brother to a 26 lb. jr. 3 yr. old. They will be sold reasonably if taken at once. We also have several litters of very fine York pigs.

ROBERT C. HICKS,
West Bathurst, - - - N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

BUTTER PARCHMENT
Maritime Farmer Office

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st. 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown. with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

.. J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as high as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows; and one ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. **Send for our BOOK OF BULLS.** A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, Hammond River, N. B.
HOLSTEIN CATTLE AND YORKSHIRE SWINE

WM. S. HARDING, PROP.

We rae all sold out of last years crop of calves. We are now offering some young bull calves sired by Sir Foforit Schuiling. Also a fine litter of young Yorkshire pigs.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple of bull calves fit to head the best herds in the provinces. Come and see them. We would be pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

Registered Jersey Heifer

We offer for sale the registered Jersey Heifer, "Pride of Rose Bank," 3 years old, milking sired by Foxhall's St. John O'Dreamwold, whose dam gave over 10,000 lbs. milk in a year. Also Peerless Incubator, Barred Rock and White Leghorn Cocks and Cockerels, which would exchange for Barred Rock Hens.

ORCHARD HILL FARM
Brown's Flats - N. B.

SPRINGVALE AYRSHIRES!

Our present offering is four bull calves eight to twelve months old all from heavy milking dams. One each from Rosalind and Nita, each a prize winner in the dairy tests Amherst F. S Show over all breeds and grades.

Inspection invited.

FRED S. BLACK & SONS
AMHERST, N. S.

COLLEGE OF AGRICULTURE
UNIVERSITY OF ILLINOIS
URBANA

The
MARITIME FARMER
AND CO-OPERATIVE DAIRYMAN

REGISTERED TRADEMARK

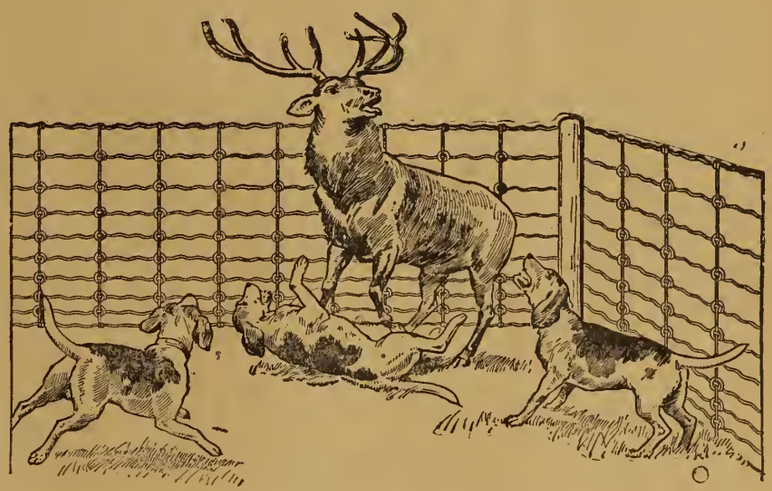
Published Twice-a-month in the Interests of the Farmers of the Maritime Provinces of Canada

Vol. 24 SUSSEX, N. B., AUGUST 6, 1918 No. 21

Agricultural Reading Room
College of Agriculture
E. Davenport, Director
Urbana Ill.

MARITIME WIRE FENCES

are made entirely from extra heavy hard drawn No. 9 steel wire. This is evenly coated with a superior peel-proof galvanize. The strands and the stays are firmly held at every join by our special never-slip lock. This knits the whole fence into one resistant fabric. There are no loose stays, no faulty locks, no spots ungalvanized. Maritime Wire Fence has "No Weak Link." It stands the tests of man, and beast, and cold, and time. It retains its shape and sightly appearance, even after years of hard service.



—HELD AT BAY—

This is because reliable materials are used throughout, and these materials are made into fence by men who know their business. Isn't there a great deal of satisfaction and pleasure in owning a fence that needs no repairing; that stays taut and straight without sagging and buckling?

MARITIME WIRE FENCE

Don't buy fence of any quality or quantity until you have thoroughly posted yourself on what Maritime Wire Fence has to offer you. It might be well to write for our Fence Book and Price List, while you are thinking about it.

The New Brunswick Wire Fence Co., Ltd.

MONCTON, N. B.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must bave address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No hlack faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

FOR SALE—Registered Ayrshire bull, No. 48032. Dam 31884 C.R.R. Also several registered bull calves.—E. CHADDECOTT, Monkham's Farm, West Merigornish, Pictou Co., N. S.

WANTED—Lime Cask Hoops, Kiln Wood, Cask Heads. Right prices paid for good stock. Apply GANDY & ALLISON, 3 and 4 North Wharf, St. John, N. B.

FOR SALE—A nice bunch of pure bred Hampshire Lambs Apply to GEO. R. WARD, West Bathurst, Glouc. Co., N. B. R. R. No. 1. Phone No. 84-6.

FOR SALE—One Type C Motor Hay Press, I.H.C., mounted, self-feeder, in perfect working order, only been used a little. Will sell for less one-half the price of a new one. For particulars apply to G. E. STEEVES, Hillsboro, N. B.

AGENTS WANTED—$1000—You can make it in your county with our fast selling Combination Cooker. One salesman banks $388 55 the first month. Another agent sells 20 in two hours. Others cleaning up $10 daily. No capital necessary. Goods shipped to reliable men on time. Territory going fast. Write quick to secure your field.—COMBINATION PRODUCTS CO., Foster, Que.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

McINTYRE BROS.
SUSSEX, - - N. B.

Pure Bred Poultry

Barred Rocks, White Wyandottes, White Orpingtons, White and Brown Leghorns, White Crested Black Polish. Choice breeding stock from good laying strains for sale. Cockerels, $2.00 each. Special prices on pairs, trios and pens during Aug. and Sept.

H. M. McMONAGLE
FREDERICTON - - N. B.

EGGS FOR HATCHING !

Breed Standard bred poultry and more of it. Eggs or stock from every popular variety can be had through our Association.

Eggs from all heavy breeds such as Bramahs, Plymouth Rocks, Wyandottes, etc., $2.00 for 15 eggs.

Eggs from the lighter breeds such as Leghorns, Minorcas and Black Spanish, etc., $1.50 for 15 eggs.

Write us your Poultry wants.

Cumberland Co. Poultry & Pet Stock Association
E. F. McKIM, Secretary
Amherst - - N. S.

Guernsey Bulls For Sale !

We offer the following high grade Guernsey Bulls for sale :—

Beauties' Dandy—Born Sept. 1917; dam, Beauty of East View 4th; a promising young animal.

Jewel's Prince—Two years old; a handsome well bred animal.

Somme—Born Jan. 2nd, 1917; dam, Queen Bud; R. P. No. 8. Her record as an immature cow was 9119 lbs. milk; 421 lbs. fat. This bull is large and well built.

All the above must be sold to make room. Correspondence solicited. Prices reasonable.

JOHN N. CHUTE,
Berwick, - - - N. S.

Advertise it in the Farmer.

ICE-CREAM MAKING ON THE FARM

Some people like homemade ice cream better than that commercially manufactured. Homemade ice ceram is very easily made, and is inexpensive. An ice cream freezer may be bought in different sizes at a small cost. Ice would be hard for most farmers to get, but it can easily be brought out by friends in town, and a delicious, refreshing product could be quickly made after a hard day's work.

A good formula to use for one gallon of frozen cream is one-half cup of gelatin dissolved in two pints of hot milk. Have two eggs and 1½ cups of sugar beaten together and then add this to the hot milk and gelatin. Pour this into the freezer can and fill up until it is two-thirds full with a mixture of milk and cream or all cream. The more cream is used the richer and the better body the frozen cream will have. If all cream is used the gelatin can be omitted if desired. Flavoring extract may be added to suit the taste. The ice should be broken up fine and one part of salt added to eight parts of ice and thoroughly mixed. More salt may be used if quick freezing is desired. The ice and salt is placed in the freezer around the can and the turning process began. It should not be turned too fast, as it will give too much swell in the early part of freezing, and this will fall down, leaving a poor, soggy body. It should not be turned too slow, or a nice velvety body of cream will not be secured. The freezing process will ordinarily last 10 to 15 minutes, after which the dash should be immediately removed and the cream packed until it gets real solid. The dash may be left in, but it is hard to dish the cream with it in.

Another simpler method of making ice cream can be used where the richness of the cream is known. Where cream is sold one will know approximately the percentage of fat. Few farmers have a Babcock testing outfit, but the fat could easily be determined if one was in possession. In this case for one gallon of 20 per cent cream add 1.6 pounds of sugar and .8 of an ounce of vanilla or other flavoring extract. Eight-tenths of an ounce of gelatin may be used for a stabilizer, but a very

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must be paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B

Ayrshire Cattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co,, N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

FRUIT PACKAGES

The fruit season is again drawing near, how about your boxes and crates for the coming season To pack and ship to the best markets, you require the best standard packages, which can be had by placing yopr orders early with the

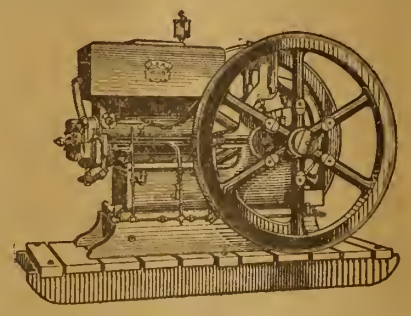
Hantsport Fruit Basket Co'y.
HANTSPORT, N. S.

Brantford Gasoline and Kerosene Engines

Stationary or Mounted

An Engine for Every Need

Kerosene Traction Engines



We Manufacture Complete lines of

Wind Mills, Grain Grinders, Wood Sawing Outfits, Pumps, Tanks, Water Boxes, Concrete Mixers, Power Spraying Outfits, etc.

Agents Wanted in Unrepresented Territory

GOOLD, SHAPELY & MUIR CO., LTD., BRANTFORD, ONT.
A. McCAUSLAND, Victoria Hotel, St. John, N. B., Maritime Representative.

FOR SALE !

In Shorthorns we have to offer a number of roans, reds and whites in both males and females, from young calves up. It would pay those wishing to purchase to come and see our stock before doing otherwise.

Our spring litters of Berkshires are all sold. Are expecting several summer and fall litters. Parties wishing to purchase please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

QUALITY BRAND
Rabbitry and Poultry Yards

Amherst, Nova Scotia
E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair.. $25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each. D. W. Young's stock, as good as money can buy.
White Leghorn 260 egg strain for hatching..... $2.00 per 15
Wbite Leghorn, No. 1 exhibition stock for hatching..... $4.00 per 15
We Guarantee Safe Delivery. Terms Cash with Order

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
Truro, - - Nova Scotia

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M. Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.

Newburn Hill Stock Farm

Our present offering is one pure bred Shorthorn Bull, 11 months of age, also a few Heifers from one to three years of age. All of good milking qualities.

Beef, Hay and Potatoes in car lots.
Choice Cultivated Strawberries a specialty
FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
UPPER SACKVILLE, N. B.

Butter Parchment at Farmer Office

good body can be secured without it, and it saves heating up a part of the cream to dissolve the gelatin. Where the cream is richer than 20 per cent., milk may be added to dilute it. Ices and sherbets can also be made very easily on the farm. They are harder to keep, and must have better packing than ice cream.

BAD TASTE IN BUTTER

Will you please tell me what is the matter with my butter in hot weather? It is all right until along about dog days, and then it ets such a bad taste that nobody can eat it. It only lasts till the dog days are over. We always cool the cream. Please tell me what I can do to stop that bad taste. L. K.

There are a number of causes for the bad taste which you note in your butter during the hot, sultry days in August. First, it may be possible that it is due to some feed which the cows get hold of. This is the least probable cause, however. It may be due to the method used in separating the cream from the milk, to the temperature to which the cream is cooled and held, or to the age of the cream at time of churning. If you use the shallow pan system of raising cream, it is almost impossible to make a good quality butter in hot weather, as the cream usually becomes sour by the time it can be skimmed. If you use the separator, each lot of cream should be cooled to 50 degrees or below in ice water immediately after separation. The cream should not be over four days old at the time of churning. The main thing is to keep the cream absolutely sweet until the night before it is to be churned. You can then allow it to sour slightly by placing it at room temperature over night. Do not let it get too sour.

Attractive Fence Prices

for Immediate Delivery

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5-40-0	5	40	9	10,10,10,10	6½	**39c**
6-40-0	6	40	9	7,7,8,9,9	7½	**45c**
7-40-0	7	40	9	5,6,6,7,7½,8½	8½	**51c**
7-48-0	7	48	9	5,6,7,9,10,11	9	**53c**
8-40	8	40	12	3,3¾,4¾,5½,7,8,8	10½	**63c**
8-48	8	48	12	4,5,6,7,8,9,9	11	**66c**
9-48-0	9	48	9	3,4,5,5,6,8,8,9	11	**66c**
9-48-0 S	9	48	9	6,6,6,6,6,6,6,6	11	**66c**
9-48	9	48	12	3,4,5,5,6,8,8,9	12	**72c**
10-50	10	50	12	3,3¼,3½,4¾,5½,6,8,8,8	13¼	**80c**
18-50-P	18	50	24	1⅜,1⅜,1⅜,1⅜,1⅜,1⅛,2,2¼,2½,3,2½,4,4½,4½,5,5,5	12¼	**80c**

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Every acre of crop in this Province must be properly harvested this year.

Many men have been called to the Colors.

Under the conditions the Department fears that many crops will remain in the fields unless men from our towns or industrial plants become harvesters, and are setting up labor bureaus in different sections of the Province to ascertain the farmers' labor needs and to register voluntary labor.

Every man in the towns or cities who has had farm experience should be ready to assist for a few days.

Every farmer should register his wants immediately at one of the following bureaus. A guarantee of help cannot be given by the Provincial Department of Agriculture, but when the requirements are known after a certain date, if necessary, the Dominion authorities will be appealed to.

Give name, address, railway station, number of days help required and when. Approximate wages per day. Where wages cannot be satisfactorily arranged, an appeal to the Department of Agriculture may be made for adjustment.

Every man willing to help should also be registered at one of the following places:—

St. John—William Kerr, N. B. Government Office, Prince William Street.

Fredericton—A. B. Wilmot, Dom. Immigration Office, Post Office Building.

Sussex—J. D. McKenna.

Moncton—J. H. King, Agricultural Representative.
Chatham—James Bremner, Jr.
Bathurst—Frank P. Doucet.
Andover & Perth—Dr. Dickenson.
Woodstock—A. C. Taylor, Agricultural School.
St. Stephen—W. S. Stevens.

J. F. TWEEDDALE,
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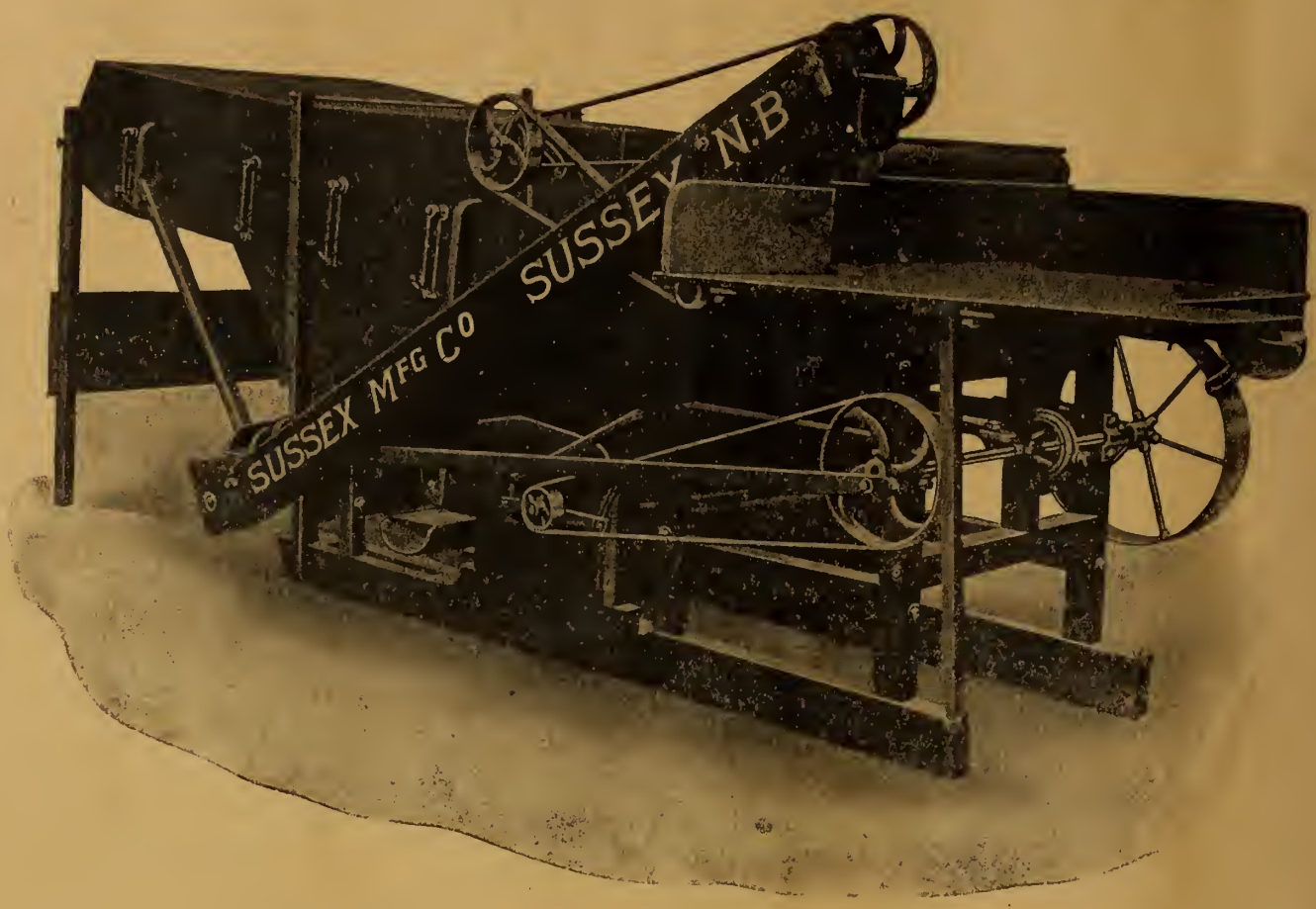

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WINTER RYE AS A GRAIN CROP IN NEW BRUNSWICK

(Experimental Farms Note.)

With the call for increased production of bread stuffs, there should be careful consideration among our farmers of what they can do to meet the emergency. Wheat, of course, is the most desirable grain for bread making and for supplying bran and middlings for stock feeding, but in many parts of New Brunswick this grain has not been a sure cropper, nor is it likely to be until more is learned about the prevention of diseases and other methods necessary to insure a good crop.

When the country was first settled nearly every farmer could and did raise his own wheat flour, though the yields of grain were not always satisfactory, but in later years, with the advent of a cheap flour from Western Canada, it was found much more profitable to grow other grains and buy flour. Consequently, in the central and southern parts of the province but little wheat has been grown and as these parts were large importers of oats as well as flour, oats, being the surer crop, were generally grown to the exclusion of wheat. On the Upper St. John and along the Northumberland Straits, however, wheat has been consistently doing well.

To test the adaptability of this crop to New Brunswick conditions the Experimental Station at Fredericton has been growing winter rye anad up to date, with very satisfactory results. On the 15th September, 1916, an area that had grown a soiling and silage crop of peas and oats was seeded to winter rye at the rate of about seven pecks to the acre. This started well that autumn and after dying down during the winter cams strong in the spring of 1917 and in July ripened a crop of thirty-four bushels per acre on straw from five to six feet in length. This crop was not pastured at all and the stand was rather thin.

On September 17, 1917, some of the seed of the above crop was sown at the rate of two bushels per acre upon land which had grown a crop of flax that year. This was pastured rather severely by lambs in October and November, but the crop came strong in the spring of 1918, the plants stooling freely, from five to ten good stalks coming from every plant. This crop on July 1st has reached a height of from five to six feet with good heads and gives every evidence of yielding over thirty bushels of grain per acre.

Rye flour makes a dark but a sweet and nutritious bread and at the present time is the main cereal food for millions of people in Northern Europe. From the evidence gained at the Experimental Station, Fredericton, and the experience of various farmers throughout the Province, it would seem very desirable that New Brunswick farmers who are not successful with wheat should try a piece of rye for next year. As long as the supply lasts, seed of winter rye may be obtained at the Experimental Station, Fredericton, N. B. Land from which an early crop of potatoes is taken will be very suitable or a clover sod ploughed immediately after haying and kept well cultivated will give a crop. Any kind of sod land that is fairly well drained can be fitted by ploughing as early as possible in August, harrowing thoroughly immediately and afterwards at least once a week until seeding. In most cases it would insure a better crop to spread from ten to fifteen loads of manure per acre and disc it into the soil. If only long green manure is available it might be spread on the sod and ploughed in.

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M. G. B.

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The amount of butter which can be made from this quantity of butterfat may vary considerably. The maximum allowance of 25 per cent overrun would give a butter production of 2.21 pounds. However, two pounds of butter would more nearly represent the average quantity which, under ordinary conditions, could be secured from this amount of fat. From one hundred pounds of 22 per cent cream, average efficiency in churning would secure a little over 26 lbs. of butter.

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Keeping the Flock in Health

It has often been said that stomach worms have done more to reduce the number of sheep than all the predatory animals. At least such a statement can be made in compa ring the losses from all diseases with the raids. The worst of it is that these losses are within the control of the flockmaster himself, while the dogs belong to someone else.

The fault with most sheepmen is that they are not well acquainted with the commonest and most disastrous ailments. Doctor Wilson has summarized so clearly the difficulties that a man may expect in the field that he should be able to save meat, wool and sheep.

Of all the domestic animals, none are more responsive to kind treatment and hygenic surroundings than the sheep. It is equally true that none possess less resistance to disease, and when once attacked succumb more readily than do sheep. The old adage that an ounce of prevention is worth a pound of cure is truer in the maintenance of the health of the flock than in any other class of domestic animals.

The first esssential in the hygenic surroundings of the flock should be high, well drained and well ventilated quarters for both winter and summer. As long as the winter quarters are dry and free from draughts, it matters little how cold they are excepting, of course, during the lambing season. Low, damp, poorly ventilated barns predispose the animals to colds, pneumonia and kindred diseases. Once a sheep is affected with pneumonia, recovery is rare. Low, damp pastrues in the summer time lead to parasitic infestation and occasionally to blackleg, anthrax, and hemmorhagic septicemia. The latter three diseases can be successfully combatted by vaccination. Foot rot is another disease brought on by damp, filthy surroundings. Too much emphasis cannot be laid on having the winter quarters high, dry and well ventilated, and the pastures well drained. If such conditions exist the losses from parasitic diseases, pneumonia and foot rot will be reduced to a minimum, and should be very small indeed. The sheep is a native of high, dry surroudings and as such we must pattern after nature, or as in all other digressions from nature's way, pay the penalty.

Fresh Water

Important as clean, dry suroudings are, pure fresh water is equally as important. The all too common practice of allowing the flock to drink from stagnant pools in the pasture or even from a stream which drains from a pasture where sheep are kept cannot be too strongly condemned. Water from such sources is almost certain to be contaminated with the eggs of many of the various parasites affecting sheep, as well as carriers of the germs of some of the infectious diseases to which the sheep is subject. The ideal water supply comes from a well or spring where there is no possible chance for pollution with the eggs of parasites or germs of infectious diseases.

In the summer time the water should always be kept fresh and cool, not cold, however, preferably in a shaded spot, while in the winter time it is much better if it can be kept reasonably warm. It should never be ice cold. While it is true that nature has made provision so that the sheep can stand exterinal cold without harm, yet internally the animal possesses little resistance to cold in the form of frozen feeds or ice water. In the majority of cases a sheep will not drink enough cold water in the winter time to properly carry on digestion, resulting in constipation and diminished gain or in severe cases diarrhoea and death if the condition is not promptly remedied. Ice water given to pregnant ewes in some cases has been known to produce abortion.

Errors in feeding often seriously menace the health of the flock. Frozen or mouldy silage is almost sure to produce serious intestinal disorders often leading to death. Too much roughage with too little concenrtates often produces constipation or impaction of the first stomach, which if not immediately treated, ends fatally. In feeding, the animals should be kept under close observation to see that they are getting enough laxative feed in the way of silage, roots or concentrates to keep the bowels open. However, it must be remembered that too much of such feeds must not be fed, especially to pregnant ewes, or bad results will follow. The condition of the animals bowels is the best guide to follow. High priced mutton and wool, and high priced feed, not only make it profitable from a health standpoint to keep the animals in a good, thrifty condition, but from a financial one as well.

One other essential to the health of the flock is exercise. Pregnant ewes especially cannot be expected to bear strong lambs unless the yhave regular exercise during the period of pregnancy. Of course it is not advisable to have the animals out during stormy weather, but on all dry days they should have plenty of range. Many successful sheep men force their flocks to take exercise by having part of the feeding racks forty or fifty yards from the barn. While such a practice means more work, yet these men are rewarded by vigorous breeding stock and strong, healthy lambs.

Parasitic Trouble

Of all the diseases to which the sheep walls heir, none give the flock owner as much concern as those caused by parasites. In the past many sheep men have been put out of business by parasitic diseases of their flocks. In the future with more men going into the sheep business, trouble from parasites is sure to increase unless intelligent measures are taken to keep them under control. Once a flock is infested with parasites, its complete cleaning up is very difficult. The important question to answer then is can a clean flock be raised from infested breeding stock? Fortunately in the case of most parasites the answer is in the affirmative.

Let us consider some of the most important parasitess individually. Probably no disease is more widely spread among sheep than nodular disease. The life history of the parasite causing this disease is imperfectly known, yet it is certain that in most cases, at least, the infection is taken in by the sheep with the food or drinking water. It has been amply demonstrated, first by the Louisiana Experiment Station, and later by others, that by what is known as the barelot method of feeding, clean lambs can be raisced from infested ewes. Essentially this method consists of providing the lambs with food and water not contaminated by the feces of the ewes. To accomplish this, the ewes with their lambs are not allowed to run on pasture together, but are kept in a bare lot free from all vegetation. All food is fed in racks and troughs so constructed that none will drop upon the ground and become contaminated. The watering troughs are also arranged so that there is no possibility of their becoming contaminated with feces of infected sheep. After the lambs become old enough so that it is only necessary that they suckle twice a day, the lambs ca nbe kept in one pasture and their mothers in another. Of course, the pasture where the lambs are kept should be one that is positively known to be free from infection, which generally means land which has not been pastured by sheep the year previous, and is well drained. While such a plan involves considerable extra labor, yet it is time well spent as a sheep suffering from nodular disease never makes rapid gains especially in the winter time. The greatest losses from this disease occur during the winter months when the animal are on dry feed. The affected animals become unthrifty and weak. If many parasites are present, death results. Post-mortem examination reveals from one to several hundred nodules about the size of a pea or larger in the walls of the intestines caused by the parasite having buried ntself there.

The Stomach Worm

Probably the most difficult parasite which we have to combat is the stomach worm. It is a reddish-brown, thread-like worm a little over an inch in length, living chiefly in the fourth stomach. It does its harm by absorbing nutritive elements from the stomacn, by absorbing blood from the walls of the stomach, and by producing a poisonous substance which destroys the red blood cells. Numerous experiments have been conducted in an effort to find some method of pasture rotation or barelot feeding to control this paraisite, but up to the present time such methods have proven of little avail. It is known that the young larvae are taken in with the food or drinking water, and that lambs become infected at an early age by taking in the larvae as they suckle their contaminated mothers. The most pronounced symptoms are noted in lambs and yearlings. In lambs the first symptoms usually are noticeable just after weaning. At this time they gradually fall away in flesh, become weak, and if the mucuous membranes of the mouth are examined, they will be found to be pale in color; later swellings appear about the neck and brisket. Of course all infseted lambs do not succumb to the disease, the greatest loss being from lack of thrift. Once a flock is infested, it cannot be hoped to entirely rid it of the parasites. Their control can in a large measure, however, be accomplished by proper management, such as pasture rotation, and at all times plenty of pure water, and by medicinal treatment with copper sulphate, gasoline or one of the various combinations of iron, arsenis, areca nut and salt.

Another parasite of considerable importance is the lung worm. It is greyish-white in color and about an inch in length. Its life history is not completely known, yet it is known that the organism will live for a long time in moist soil, outside of the animal's body. The first symptoms noticed in the affected animals is a more or less violent cough, later difficult breathing, emaciation and debility. The cough is especially noticeable during exercise. Post-mortem examination reveals the parasites in the lungs and bronchial tubes. Until Horms and Freeborn of California discovered the chloroform treatment, little could be done to relieve the condition. The chlorform treatment has, however, proven to be very effective. The affected animals are given enough chlorform by inhalation to make them stagger. This produces enough irritation to start the animals coughing and thus expells the worms which have been partly anesthetized by the chloroform. As the animal swallows most of the parasites as they are expelled from the lungs, a saline purge should follow in two or three hours. Food and water must be so placed that it cannot become contaminated with the infective feces.. This treatment should be repeated in

(Continued on page 681)

Some Constitutional Diseases of the Potato

Paper Read at Conference of Agricultural Representatives in Guelph, by Paul A. Murphy, in Charge of Potato Disease Investigations, Dominion Department of Agriculture.

It is not necessary to study statistics of potato production to see that potato growig is not on a whole a very successful or profitable line of farming in Ontario. This is particularly so if one is familiar with the potato industry in other parts of the Dominion. The statistics, however, amply bear this contention out. Turning to the average yield per acre for the last ten year period we find that the highest yields are obtained in British Columbia, namely 206 bushels per acre, and that the figure drops more or less gradually as one comes east through the Prairie Provinces. The next highest yield after British Columbia is obtained in the Maritime Provinces, where it averages about 190 bushels during the same period. In Quebec the figure comes down to 140 bushels and in Ontario it reaches 123 bushels per acre, the lowest in the Dominion.

The reason for this gradual decline in yields from both coasts is probably not a simple one, but a partial explanation is not far to seek. It is known now that a number of very serious diseases are more or less widespread in Ontario grown potatoes while they are absent or present in less virulent form in those parts where the yield is high. This is known to be true in the Maritime Provinces taken as a whole, and it is also presumably true for British Columbia. It is known that these disease besgin to appear in agravated form in Western Quebec and the fact is significant that it is about here we first meet with lower yields. It might be suggested that the climatic conditions are rally responsible for the reduction in the crop. This is no doubt true, but only indirectly, as will be shown. The fact, now so well known to experimenters and many practical growers, that good seed imported from New Ontario or the Maritime Provinces at first yields just as well even in districts reputed poor potato sections as in its original home is sufficient to show that climate is not directly responsible.

The principle disease which is prevalent in many parts of Old Ontario, and which is apparently responsible more than anything else for reducing the yield of potatoes, is the Leaf Roll. Plants attacked by it are considerably dwarfed in size and of a lighter green color than normal. They are stiff and upstanding in appearance and the lower leaves in particular become thick and tough to the feel and curl up at the sides instead of being flat. They afterwards become spotted and begin to wither particularly near the tips. It should be remarked that this rolling is on the lowest leaves and it is not to be confused with curled up and limp appearance of plants suffering from drought and heat which is now so general.

Leaf Roll plants give about one-third of the normal yield. The potatoes tend to be small and they are attached close to the stem as a rule. There is no sign of the disease on the tubers. These potatoes if planted invariably give rise to a diseased crop with the same symptoms and same yielding capacity. This is the principal way in which the disease is perpetuated, but it can also spread short distances in the field from affected plants to neighboring healthy ones. The latter look normal the first year but the tubers produced by them may give rise to a crop which is largely diseased.

It also appears clearly from some experiments carried out by Dr. C. A. Zavitz at Guelph that climatic conditions induce Leaf Roll in potatoes which were previously healthy. The author has observed in importations of the same strain of potatoes which have been made year by year from New Brunswick and Northern Ontario that there is no Leaf Roll in the stock the first year they are grown at Guelph but that it then appears and increases rapidly, as shown in the following table:

Leaf Roll Record of the Same Strain of Potatoes After Being Grown:

1	year	at	Guelph.....	0%	Leaf	Roll
2	"	"	"	15%	"	"
3	"	"	"	24%	"	"
4	"	"	"	63%	"	"
6	"	"	"	89%	"	"

Another important disease which reduces the potato crop in Ontario, is Mosaic. It is recognized bythe fact that the leaves are corrugated or puckered all over and mottled with faint light green spots. It is most prevalent on Green Moutains and is most readily seen during dull, cool weather such as we had in June. Diesased plants may not be much reduced in size unless the attack is severe but they are less vigorous and less well able to withtand drought and tin-burn. The yield is not reduced to the same extent as in Leaf Roll, but it seldom exceeds two-thirds of the normal. The eating or keeping qualities of the potatos are not affected and there is no sign by which diseased tubers may be recognized.

The trouble is spread by the use of the seed from affected plants as in the case of Leaf Roll. It is not known definitely if it spreads in the field or if the climatic conditions of Ontario induce it in healthy potatoes, but both may occur. It certainly often appears in a much more agravated form in Ontario than in the Maritime Provinces for instance.

The control of the Leaf Roll, Mosaic and some similar but less comon diseases can be readily deduced from what has been said above. It consists of the periodical introduction of healthy seed from districts from which Leaf Roll at least is naturally absent. Such districts as these may be found in Northern Ontario and the Maritime Provinces. This course is being followed with success by many growers and the experiments now being conducted by the Ontario Department in every county in the Province to compare New Ontario, New Brunswick and Old Ontario seed will sow to what exten it should be extended. The Dominion Department of Agriculture is also making a comprehensive survey of Old Ontario to determine to what extent these diseases are present. This information is needed before comprehensive control measures can be suggested. The importation of healthy seed is the only course open, but fortunately it gives a perfect control of the diseases if the seed is imported sufficiently frequently. The selection of healthy plants from partly diseased crops in Old Ontario with a view to using their product for seed is not recommended.

It also follows from the fact that none of the diseases mentioned can be detected in the tubers that the only guarantee possible to the man who buys seed is a knowledge of what the growing crop looked like the previous year. The Dominion Government maintains an inspection service in the principal seed growing districts for this purpose. The crops are inspected before and after harvest and tags are supplied to growers who have potatoes fit for seed purposes to mark their stock with. This system was put in active operation for the first time last year and it is confidently believed that with the experience then gained a supply of the best possible seed will be secured which can be purchased with confidence that it is the best procurable. Where our survey work shows that much Leaf Roll and similar serious diseases are present it will be found that the planting of the certified imported seed will very largely increase potato production.

One Reason Why Insects in Search of Their Food Avoid Healthy Plants

Any treatment which increases the vigor and hastens the normal growth of corn, wheat, or other agricultural plants usually increases their power to resist or overcome the attacks of insects or disease; and it is evident that imperfect, abnormal or poorly nourished plants are more likely to suffer from such attacks than healthy plants.

It is comon observation that the chinch bug or Hessian fly may attack and almost destroy wheat that would otherwise yield 10 or 15 bushels per acre, while wheat growing on another part of the same farm or field on land naturally more productive or better fertilized, and capable of producing 30 bushels or more per acre, is not attacked or at most not noticeably injured.

Animals and Plants

It is well known that animals which are not well fed and allowed to become poor and weak are much more liable to attacks from lice or other insect diseases, or to suffer from disease; and the information is sufficient to convince any careful student that plants are subject to similar attacks under unfavorable conditions.

Just how strong, healthy plants are able to resist or overcome insect attacks, while weak plants succumb to them is not fully determined. Of course, if a plant is subsisting on what might be called a half ration, an injury to a root by the bite of an insect or a loss of sap withdrawn by a sucking insect must further weaken the plant; whereas if the root system is taking up such an abundance of plant food that there is a tendency for the plant to start new plants or shoots, as in the suckering of corn, then such a root injury may have no effect on the main stalk.

Why is it that fleas or bed bugs will attack one person and not another sleeping in the same bed? Why does poison ivy poison one person and not another. Unquestionably there are similar differences among plants.

The larvae of the Hessian fly must secure its food by attacking the plant, but if the plant is able to heal the wound before the larva can enlarge it the insect may perish. The plant may be poisoned by insects or by fungi, and it may have power to develop an anti-toxin or serum to destroy the poison, provided the plant is well-nourished. This is within the reasonable possibilities but still undetermined.

Peculiar Powers of Plants

Plants have some remarkable properties. For erample, a plant may be grown in a solution containing equal amounts of sodium and potassium, both in salts, soluble in water, but the plant will absorb the potassium and largely reject the sodium. This is known as the power of selective absorption, and that plants have this power is well established. To prove this fact one needs only to analyze either the plant or the unused portion of the solution in which the plant has grown for a time. Such an analysis regularly show that the plant takes up most of the patassium while most of the sodium remains in the solution.

When the sugar tree is tapped, a stream of sap flows from the side of the tree. But the water in this liquid was first taken from the soils. Thus, the plant has power to elevate water and to discharge it far above the surface of the ground. This, too, is a remarkable property of plant dife. It is illustrated by the drop of fluid which at times appears on the tip of the brace root of corn before it penetrates the soil.

When the legume plants are sparsely infected with the niortgen-fixing bacteria, the tubercules usually become very large, but when the points of infection are numerous, the individual tubercules usually remain small. Seemingly, hte host plant, such as alfalfa, for example, has power to feed the bacteria so abundantly at one point as to cause their rapid multiplication, in order that they, in turn, may furnish the alfalfa with more nitrogen.

Most people have seen how a tree heals a wound, as where a limb has been cut off, but I was once shown an old stump of a beech tree which was still alive years after the tree had been cut down. This stump seemed to be trying to heal itself over the top much the same as a tree heals over where a limb is removed. The stump seemed to alone, with no sprouts, but another beech tree was growing nearby, perhaps ten or fifteen feet from the stump and I have no doubt that both belonged to the one root system and that the living tree fed the stump and thus kept it alive; and because the stump still lived it had power to resist the attacks of fungi and other agencies of disease which commonly produce decay.

Life is really the great mystery. How quickly the evidence of decay appears when life is gone, whether from animal or plant; the dead calf is soon putrid anad the dead corn kernel planted in the fertile soil is soon attacked by mold.

Doctor S. A. Forbes, the well known entomologist, has suggested that one reason why insects avoid healthy plants is that the very dilute juice or sap of a succulent rapidly growing health plant may constitute a starvation diet for healthy insects; in other words, that the capacity of the insect for such juice is not sufficient to furnish it with the amount of nutrition necessary for maintenance and reproduction; and that sucking insects prefer the concentrated sap of somewhat withered plants.

Quack or "twitch" grass must be kept below ground or else dug out entirely if you expect to grow vegetables in the same field.

Pull and burn diseased flowering plants. They are of no further use and may spread much trouble.

The Common Breeds of Sheep

Their Adaptability for New Brunswick Conditions

By Thomas Hetherington, Live Stock Superintendent Dept. of Agriculture, Fredericton

We have in New Brunswick at least nine breeds of sheep some or these being adapted to our conditons more than others. These breeds may be conveniently classified as follows:

1. Long Wooled—(Cotswold), (Lincoln', (Leicester).
2. Medium — (Cheviot), (Dorset Horn).
3. Short Wooled or Down Breeds— .Oxford). (Shropshire), Hampshire). (Southdown).

The long wooled breeds enumerated above are very old English breeds and it was this blood that was used as foundation stock by the pioneers ot this province. Quantity of wool foi the coarse homespun clothing which these breeds could supply was all the justification necessary to support the pioneers choice of breed. In the main the grade and native stock now found in the province is descended from either one of the long wooled breeds as evidenced by the predominance ot white faced sheep at the present time. These three breeds the Lincoln, Leicester and Cotswold have many things in common. They are the largest sheep we have, on the average they cut the most wool, they are considered our most delicate breeds, this being especially true of the Lincoln and Leicester and as a consequence are on the whole more susceptible to disease than are some of the hardier breeds that will be mentioned later. Other features which are characteristic of the long wooled breeds is the openness of the wool, inclination to bareness on hte belly, and the coarse nature of the wool.

Due to their size these breeds demand exceptionally good pasture and careful feeding in winter. Hence the farmer with light soil, little feed and barren hillsides for pasture would do well to select a lighter breed more adapted to his conditions. Present high wool prices are attracting new converts to these breeds, but in the end they are really losing money because under poor conditions poor feed, etc., the size is reduced, the wool clip lowered, the vitality of the sheep naturally delicate is depleted and his losses would be numerous.

Climatic conditions in the province are not favorable to the long opened wooled breeds. The late cold rains and snows of the fall and winter months find a resting place in the valley formed by the parting of the wool along the sheeps back. This causes colds, etc., the system is depleted and they readily fall victims to other diseases which happen along. With good pasture conditions, with plenty of available feed, and under the management of a shepherd or farmer well versed in sheep lore, conversant with the various preventative measures so necessary to maintain the health of the flock a farmer is justified in choosing one of the long wooled breeds. Without these conditions he is not.

The Medium Wool Breeds

The Cheviot and Dorset Horn are not generally known in New Brunswick. They are sheep of medius size cutting a medium weight of fleece which is about midway in length between the short wooled and the long wooled breeds. The outstanding feature about the Cheviot is its ability to withstand severe conditions. Pure bred Cheviot rams have always left an impress in the districts in which they have been used. Sheep men always have a good word for the Cheviot. Each year their numbers are increasing, hardiness, freedom from disease, their activity, and prolificacy are sure pasports to favor with the farmer. The Cheviot ram is an active one, few ewes escape getting in lamb, his virility is astonishing. In the province of Quebec many farmers have found it advantageous to use a Cheviot ram on grade Leicester stock. This cross is epecially recommended by Professor Barton of McDonald College. It might be mentioned here that Professor Barton has been largely instrumental in bringing in some of the finest Cheviot stock to be found in Canada. The Cheviot should be used more and more in this Province especially where the pasturage is inclined to be scant. As a breed the Cheviot is considered very nervous and unless properly tamed, they will develop into jumpers.

The Dorset Horen has its admirers in certain sections where it has gained considerable of foothold, noticeably in Charlotte County. Personal experience with this breed has been limited. They are of medium size, not as active as the Cheviot and from my experience, not as hardy or as healthy. Prolificacy is an outstanding feature of the Dorset, yielding as it does two crops of lambs a year if given an opportunity.

The Short Wooled or Down Breeds

The Down breeds wth the exception of the South down are becoming increasingly popular each year. The Southdown is not a utility breed and has nothing to recommend it to the New Brunswick farmer. The Oxford, the Shropshire and the Hampshire are utility breeds in the truest sense combining as they do both mutton and wool producing qualities. These three breeds have many things in common, black faces, the wool is very similar in length and quality, all are close wooled, hardy, healthy and quiet sheep. The Hampshire and Oxford are rather more upstanding than the Shropshire and appear larger than they really are. The Shropshire ram lamb due to this low setness and extreme compactness is not looked upon with favor by farmers that have not had previous experience with it. However when placed on the scales it will be found to comparefavorably with ram lambs of most of the other breeds.

The wool grower or porspective wool grower must not be guided by the time honored saying "There is no best breed." There is a best breed. In choosing this "best" breed use judgment. . There is a place for the long wooled breeds in the hands of a man well up in the sheep business. They demand good pasture and exceptionally good care and treatment. For average conditions the farmer will not be far astray in selecting one of the Down breeds such as the Shropshire, Oxford or Hampshire.

The Cheviot for rough and hilly country will prove profitable where other breeds would result in a loss.

KEEPING THE SOIL STIRRED ALL SUMMER

There are a number of good reasons why we should keep the soil stirred in the latter part of the summer. The value of a dust mulch will be realized in the more abundant harvest and all work along this line pays when the rains cease.

The corn needs a plentiful supply of moisture at no other time as much as when the ears are forming and filling. At no other time can a good mulch of th esoil over the cultivated field be put to better use. And this is too often the time when the farmers have iald by their crop anad resigned their work to the future and the elements.

The surface, if left unstirred at this time, soon cracks into a mass of hard, irregular clods with every hot drying breeze circulating between them. These crevices widen and deepen and the soil dries out rapidly. We have found these crevices in the cornfield to be two feet deep in dry times. All the roots that cross these fissures underground are dried and broken and the crop yield lowered accordingly.

Frequent shallow cultivation will prevent these crevices from forming by filling each with a fine sift of dust at its start. . These will form as sure as the ground dries and we must arrange to keep it from drying. We have dug through a good mulch even after periods of prolonged dry weather in a healthy field of corn and found the undersoil moist and well able to sustain the crop until maturity.

A light, one-horse harrow or drag answers the purpose well for fitting the surface for retaining moisture. The finely granulated soil is crushed into the new fissures as formed and the crackling is checked where the weekly cultivation is resorted to. Instead of a few large crevices being formed between the hils to break the roots and dry out the soil, a fine system of aeration is set up, through the formatioin of small fissures of shallow depth. We want some air in the soil but not the hot drying blasts that penetrate the unstirred soil.

An old mow or corn planter wheel will answer this purpose as it both pulverizes the soil and drags the crevices full. The wheels are rouding and sli pbetween the rows easily. This also destroys the late summer and fall weeds in their susceptible stage. Especially is this recommended when the corn ground is to be sown to wheat.

KILLING MUSTARD WITH BLUESTONE

The demonstrations given throughout Ontario for the destruction of wild mustard have proved that in the majority of cases, under favorable conditions spraying with copper sulphate almost entirely eradicates the troublesome weed from growing cereal crops.

1. How the Bluestone is applied:—Place an ordinary spray pump to which is attached the 6-row sprayer, on a cart or light wagon; drive along slowly through the field, applying the solution to the mustard plants in the form of a fine spray. When the field is badly infested it is advisable to spray the crop in strips in order that no mustard plants may escape the spary.

2. How the Blue-Stone solution is made:—Put nine (9) pounds of Blue Stone (Copper Sulphate) in a coarse sack or bag and suspend it in a vessel containing three (3) gallons of very hot or boiling water. The Blue-Stone will usually dissolve in 15 or 20 miuutes. Strain the solution into the barrel of the spray pump and fill up with cold water to make 40 or 45 gallons.

3. When to spray the mustard plants:—Spray the mustard on a calm, bright day, just as the plants are coming into bloom. Should a heavy rain come immediately after spraying it will be necessary to spray again.

4. How much is required to spray an acre thoroughly? A barrel of the solution costing about eighty or ninety cents is sufficient for an acre. Successful results are obtained when the spraying is done thoroughly.

5.—Are the crops in which mustard is growing hurt by the spray? Experience sows that the young wheat barley, oats or young clover plants are not injured beyond a slight browning for a few days by the Blue-Stone spray.—Botanical Department O. A. C., Guelph.

The Cotton Seed Meal Supply

—o—

Price will be Fixed by the United States Food Controller---Maritime Farmer will Endeavour to Get Import License for Agricultural Societies

The Maritime Farmer has been advised by one of the largest United States mills engaged in the production of cotton seed meal that the price for the 1918 crop will be fixed in a few days by the United States food controller. They also advise up that they will supply us with our requirements for 1918-19 if they are allowed to export to Canada. The Maritime Farmer is willing to buy for agricultural societies whose members are subscribers for this paper. We saved a lot of money for buyers last year and could have saved thousands of dollars more if the societies had been awake to their opportunities. Before this feed can be imported, it will be necessary to apply to Ottawa for a license. It is there fore imperative that orders be placed at once. When ordering remember that we will not handle any lower grade than 36 per cent. protein and an even higher grade if it can be procurable. The shippers will make draft on your society representative and it will be necessary when ordering goods to have your bank notify us that the draft for the car or cars will be paid promptly on presentation. All goods will be shipped subject to sight draft attached to bill of lading and shipping order. This means it must be paid on presentation and the railway held responsible for any losses. Last year the Maritime Farmer landed 38½ per cent. protein meal for $49.50 per ton. What did you pay for a much lower grade of cotton seed meal in 1917? Get your society busy and send your order in early.

CANADIAN MANUFACTURERS SPEAKING "FRANKLY AND SINCERELY"

On another page of this issue appears an announcement entitled: "Mr. Farmer— we believe you to be fair" sent to us on instructions from the Canadian Manufacturers' Association and the insertion of which is being paid for by that body.

This article is the subject of an address delivered before the Canadian Manufacturers Association in convention assembled at Montreal on June 15th by Mr. S. R. Parsons, the retiring President of the Association, and reflects the carefully thought out views on the important subjects of Tariff and Labour held today by the Canadian Manufacturers Association. The article is worth careful reading, as the viewpoint of the Manuafcturers should be, at least, understood by the farming community.

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Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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JULY 23, 1918

DATES OF ISSUE.

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VALUE OF LOCAL BREED ORGANIZATIONS

Local breed organizations are essential to the progress of pedigree live stock production. In no other way can the cause of more and better live stock on the farms be given such an effective stimulus as results from the cooperative work of breeders in a particular section, whether it be in behalf of one breed or of all. In union there is strength. In concerted effort the thing to be accomplished is made easy, whereas individual effort may fail of its purpose, entirely. The cooperative plan has worked out so successfully wherever tried that there is no valid argument to be made against it.

The problem with the beginner in the pedigree business is that of finding a market for the surplus products of his herd or stud. When he adds to his farm investment pedigree breeding stock, he is in a measure operating a factory and the products of that factory must be distributed. At first the stock to be offered may be one or two bulls or stallions, too small a number to attract buyers with an individual advertisement. If such a small number must be shipped quite a distance to some sale center the expense is out of proportion to the selling price.

Suppose there are quite a number of such small holders in that county or district, each one of whom faces the same problems. Working individually and perhaps at cross purposes, little is accomplished; returns are slow and sooner or later discouraging features are to be faced. Reference of course, is made to the beginner who embarks on a limited scale and whose most trying time is the first few years of his venture. But where there is a live county organization the story is different. If there is a sufficient number of breeders of any one breed from whose herds may be drawn enough stock for a sale, that will justify the essential publicity, buyers are attracted from near and far and the products of the small breeders, the various little live stock producing factories in the county, are absorbed at profitable prices. The members have added a most profitable adjunct to their farming operations. Co-operation has taken the place of the go-it-alone plan and cooperation in such instances removes many obstacles which confront and obstruct the path of success of the beginner and shows the road to success.

Such organizations are most practical and successful and are doing effective work in many sections of the country at this time. A case in point is revealed in a study of the workings of the Fort Wayne District Shorthorn Breeders' Association at Huntertown, Ind. A few years ago a few struggling Shorthorn breeders in that section of northern Indiana had made average progress, but no more. Nothing out of the ordinary had been done to attract buyers. A few years ago one of the breed's best "boosters," Will Johnson, got busy on an organization and one of the strongest, most active and most effective Shorthorn breed organizations of the country was effected. Semi-annual sales have been held for a number of years and the surplus of the herds of the members has gone to other sections of Indiana and to other states at good prices. The problem of what to do with the products of the herds is most efficiently solved. There is another result growing out of the success of this organization and that is that the members have strengthened their herds by the purchase of a higher grade of females and bulls of more merit have been secured for service. In a few instances a number of neighboring breeders have gone together and purchased a bull for joint use and secured a better one than would have been taken there had any one individual had to go it alone in the purchase. The draft horse breeders in the same section have an active working organization and are also getting results.

What has been done in that section may be done in any other section. We would urge that similar organizations be effected everywhere for these mean prosperity to the small breeder and his prosperity insures that of the larger one. It does more. It means better productions. It means better conditioning, and these mean better values to the owners. There is nothing that so stimulates the young breeder towards the production of better live stock as the comparisons and the values placed on the different lots in a consignment sale, as the member who is not ambitious to present stock which will command the bids of the discriminating buyer is not making the most of his opportunities. We would advise pedigree breeders to organize local associations and attract the attention of buyers to their section as the place to go for good breeding stock. Prosperity to the individual and to the community will be the result.

TEAM WORK FOSTERS EFFICIENCY

Fall into line. It is not so much the old individual effort that counts to-day as the new concerted one—the drive made up of both veterans and recruits. One of the lessons we as Canadian men needed to learn was to do team work. And we are learning it. We have passed that old Slough of Despond which threatened to end Pilgrim's immortal progress—distrust of ourselves and others—and are up and away towards heights of practical endeavor, aye, and achievement undreamed of before we united our forces.

Now comes into working order for the first time the utility of team work. No more of the conceit which laughs our amateur efforts to scorn, but a whole-souled sympathetic merging of seasoned veteran and raw recruit for the accomplishment of a duty lying near the heart of every one of us. The more team work we do the closer we will come to that unity which spells strength and confidence and faith in each other. So no more balking among you veterans; the beginners need your co-operation, not your criticism.

You know what the Berlin war report said of our men after a battle: "There was no keeping them (Canadians) back, they came on rushing, shoulder to shoulder." Shall their example be wasted upon us?

Team work is what tells. "And the Old man proffered a twig, and bade the Young man break it. When he had done this, the Old Man made a bundle of similar twigs and bade the Young man break them also. This the Young man could not do, and the Old man exhorted him to observe how in union lieth strength." No more misunderstandings, no more fueds, but shoulder to shoulder, a long pull, a strong pull, and a pull all together.

SAVING THE OUNCES

You have perhaps seen a grasshopper eating in an immense meadow and paid no attention. But if you have seen thousands, hundreds of thousands of grasshoppers eating their way steadily through a fruitful field, devastating the crops as irretrievably as the elements themselves, perhaps you have been impressed.

You are the integral unit of that vast civilian army which can similarly destroy the food stores essential for our armies and those of our Allies.

Save two ounces of butter a week? What are two ounces? Eaten or wasted they'll never be noticed. But figure it out for your own home. You have four people in your family? Well, two ounces would be multiplied by four and you'd have half a pound saved every week. You can think of that more easily. And from that it's no trouble at all to see that in a year's time you have released to the army twenty-six pounds of butter—full rations of this food for a soldier for six months. And "fats make fuel for fighters."

A pound of wheat flour seems trifling. Why, it's less than a large loaf of bread! And a loaf of bread for each member of a family of four doesn't loom very large in the week's budget of menus. For one person it is less than a slice a meal. It can matter so much that this saving on the part of your family for one year, would give a soldier fighting at the front a loaf of bread every day for half a year.

It is the same with other things, meat and sugar, at the individual rate of seven ounces a week, accumulates ninety-one pounds as the family's annual contribution to a soldier in each of these important staples. And it would be a generous supply. And it would only mean giving up a few lumps of sugar every day.

* * *

Are you sending a son o ra daughter to college this fall? The maintenance of our national intellectual balance is of vital importance in times like these.

* * *

Remember that the wind, not sun, cures the hay. The one place where hot air pays on the farm.

* * *

Remember that you do not raise hay or grass for the seed, but for the leaf and stalk. They are best before the seed fully forms.

* * *

A stomachful of wholesome food
For every Allied fighter,
Will mean a stomachful of war
For Bill—the Divine righter.

KEEPING THE FLOCK IN HEALTH

(Continued from page 677)

about three days. two or three treatments usually being sufficient to practically rid the animals of infection. After such treatment it is highly important to keep the animals in a good thrifty condition so that they will be able to keep free from infection.

During the winter months, the disease known as gid causes the flock owner more or less trouble in most section of this country. This disease is caused by the cystic form of a tape worm common to dogs, foxes and wolves. The eggs are passed out with the feces of those animals and when taken up with the drinking water ot the sheep hatch out into the larva form which finally finds its way to the brain or spinal cord. Here it develops causing pressure on the brain or spinal cord of the sheep. The symptoms produced are clearly those of brain trouble, causing the animal to travel in a circle or stand with its head pushed in a corner or against a wall. Little or nothing is practical in the way of treatment. However, the disease can be prevented by providing the flock with water uncontaminated with he feces of dogs, foxes or wolves which harbor the adult form of the tape worm. Of course, it goes without soying those animals should never be allowed to devour the carcass of sheep having died of the disease—a method by which the disease has been sprea don the wetsern ranges.

A parasite causing the sheepman considerable annoyance is the larval form of the sheep gad fly. The adult fly is somewhat larger than the ordinary house fly. During the summer months the female deposits her eggs around the nostrils of the sheep; in a few days they hatch out into the upper part of the nasal cavity. Here they remain during the winter in the form of a grub, about three-fourths of an inch in length, causing the affected animal considerable irritation manifested by a discharge from the nostrils. The condition rarely produces death, the loss being that if lessened gains and loss of condition. Probably the most practical way to prevent infection is to smear pine tar about the noses of the flock during the summer months, which will generally keep the adult fly away from the sheep. This can be done in a practical way by boring two concentric holes in a log, the smaller the deeper. Salt is placed in the bottom of the smaller hole, while pine tar is smeared around the larger. When the animal comes to get salt, it will then automatically smear its nose with the tar. In cases of valuable animals, it is sometimes advisable to have the grubs surgically removed.

The liver fluke is a parasite that occasions considerable loss in the southern half of the United States. The worm is lance shaped, about three eighths of an inch in length. The adult form lives in the liveh where it causes diseased yellowish nodules, each of which contains one of the flat ovoid worms. As the fluke requires the snail as an intermediate host, and as the larvae are taken in with the drinking water, plainly the mode of prevention is t oprovide pure water and well drained pastures. Once an animal is infected but litttle can be done in way of treatment aside from giving it extra care and if possible getting it read yfor market. Lambs are most often affected.

This by no means exhausts the list of internal parasites affecting sheep yet it includes most of the important ones found in this section of the country. In general, it may be said that pure water, pasture rotation, thrifty animals and medicinal treatment will in a large measure control parasitic diseases. Too much emphasis cannot be laid on pure water. The flock should never be allowed to drink water out of pools or water that drains from a sheep pasture. The ideal pasture is high, dry and well drained. Another important factor in the prevention of parasites is to eliminate all unthrifty animals from the breeding stock. The vigorous growing lamb is less likely to become a host to the various parasites than the unthrifty one.

External Parasites

So far as the external parasites are concerned, their control is easy. If the flock is dipped twice in the spring and twice in the fall at intervals of about a week, no trouble will be experienced from ticks, lice or scabies. The spring dipping should be immediately bright, still day should be selected for the job, both spring and fall, or colds and pneumonia are liable to result. The dip should be kept reasonably warm (about 110 degrees F.) if greatest efficiency is desired.

Relatively few drugs are used internally in the treatment of sheep diseases. This is due to the tendency of the animal to give up as soon as it gets sick. Epsom or Glaubers saltts given in three to five ounce doses will generally relieve impaction of the first stomach or constipation, both of which are usually brought on by diatetic error already discussed. Diarrhoea can usually be controlled by bismuth and salol, equau parts, given in one-half teaspoonful doses every three or four hours.

A few drops of spirits of camphor or a few inhalations of aromatic spirits of ammonia will often revive a lamb apparently born dead. Artificial respiration should always be resorted to in such lambs. . During the lambing season the ewes should be watched closely for unborn dead lambs. improper cleaning following lambing or difficult partruition due to faulty presentation of the lamb. If the lamb is to be saved, the latter condition must be relieved promptly. If the ewe continues to discharge, the uterus (womb) should be flushed out carefully with a 2% lugols solution in water heated to about 105 degrees, or therapogen 1% solution, may be substituted for the lugulos solution. The first two mentioned drugs are to be preferred, however.

What is known as mastitis or "caked udder" or "'blue bag" is quite common in ewes. It is a difficult condition to treat, yet it responds fairly well if taken in hand early to tincture of iodine one part, and spirits of camphor two parts, painted on the udder twice a day. The udder should be milked out often and carefully. The male lambs should be castrated when they are about two or three weeks old. For this operation it is well to choose a warm sunshiny day. Avoid causing the lambs to be castrated undue excitement while catching anad do the operation as quickly as possible, removing as much of the cord and membranes surrounding the testicle as possible. Rapid work to lessen the pain and shock to the lamb is essential to successful operating. During fly time the scrotum should be smeared with pine tar after the operation to keep flies away.

Another trouble that causes the flock owner considerable annoyance and often serious loss is bloating. This is most likely to occur when the flock is on clover pasture following a rain or heavy dew on hot sultry days, although it may occur at any time of the year or in any kindw of weather when the flock is on grass. Treatment consists of drenching the animal with one-half of one per cent. solution of creolin, or coal tar dip. The solution is more effective if warm. Fresh cow's milk is also used successfully when there is time to obtain it. If nothing else is at hand, use plain water. The mechanical effect of swallowing will often start the animal erupting the gas. It is generally necessary to act quickly and too much time cannot be taken to find a remedy if successful results are to be obtained.

(I. D. Wilson, D. V. M. Pennsylvania State College, in Amercian Sheep Breeder.

SPRAYING TO PROTECT THE POTATO CROP

You insure your barns against fire. Why not isure your crop against disease? The insurance company protects you against loss by fire. Spraying will protect your potato crop against loss from disease and insects.

In these war times spraying is more necessary than ever. Labor is short. Use it where it brings the greatest returns. Spraying doubles the bushels produced per day of human labor.

Fertilizer is hard to get. Spraying will make it more effective—make the supply do more in terms of food produced.

The entire profits of the year may be wiped out by blight within a couple of days unless you spray to protect your investment. You can't afford to take such a chance this year.

The old Colorado shellback comes out of the ground almost as soon as the plants. She lays her eggs, which soon hatch. The slugs have enormous appetites and proceed to use them at once.

Be ready for the slug. It takes a deadly poison to kill him. Give him some poison in one form or another with his first meal. It takes less poison to kill a newly hatched slug than to kill an old shellback, and the poison acts more quickly. After a bite or two of poison the little slug becomes a dead bug, and you see neither the bug nor any damage to your crop. You will feel better satisfied if you kill the bugs and flea beetles before they eat the leaves than afterward. Why grow potato bugs?

While you are spraying for the Colorado beetle you may as well include a spray for the flea beetle and for blight. They are all due to arrive at about the same time. You can save time and labor by applying both sprays together, and it works even more effectively.

Flea beetles by the millions arrive as soon as the weather warms up and the potatoes get well started.

They riddle the leaves, "shoot them full of holes," and so weaken and injure the plants that they fall easy victims to early blight—a disease that comes along with the beetles.

It is hard to poison the flea beetles—they don't stay long enough in one place. Many growers have found it almost impossible to get rid of them with Paris green or arsenate of lead alone, but by using a copper fungicide spray for blight, either factory made or home-made Bordeaux with arsenate of lead, you can get rid of the flea beetles, and at the same time this spray will prevent the next trouble, the so-called early blight. Even if the potato bug and flea beetles fail to appear, spray just the same. Remember that spraying is prevention and not a cure. When the blight appears, the game is lost.

Early blight first appears as small brown spots on the leaves. These spots run together, the entire leaf turns yellow, withers up and dies. When the growth of the plant is stopped, the yield is cut from 10 to 25 per cent.; the potatoes are small, unripe and of poor quality.

Often the cause of the loss is not recognized, because this disease never causes rot. The potato grower thinks that the crop simply ripened prematurely.

In spraying against the flea beetle the first step is taken toward preventing early blight. The spray mixture on the leaves kills the spores whenever they strike. But the spray must be there first.

The next step is to repeat the spray whenever the vines outgrow their protective covering, or the spray is washed off by beating rains.

With the coming of cool nights, frequent showers and heavy dews, conditions become ideal for the late blight —the blight that causes soft field rot of the potato.

The infection is caused by spores—small seed-like bodies—which are carried through the air by millions, and which may attach to any part of the growing plant.

As with the early blight, whenever the spores of the disease come in contact with the spray covered leaf, they are killed. **But once let the disease get started and no amount of spraying will effect a cure.**

A mist spray, not a sprinkle, is best, and power enough must be had to drive the swirling mist over all the plant, on top, at the sides, underneath. Spraying the under side of the foilage is most important. A spore lodging on the under side of the leaf is more likely to live and do harm than a spore falling on the top of the leaf, because under the leaf there is more moisture and less sunlight to give a drying effect.

One nozzle per row is enough to start with; but for the later spraying two or more nozzles are needed, and with the powe rbehind them to make an effective spray.

As long as the vines remain green, they should be kept covered with spray. The gain from late sprayings much overbalances any damage that may be caused by the machine in passing through the tangled rows.

You can't insure your barn after the fire starts. Neither can you protect your potato crop after the blight appears. You must be there with a spray before the spores arrive, and stay there with a spray as long as the danger lasts.

IT IS TIME TO SPRAY POTATOES

The U. S. Government report is out which shows that the state of Maine has only 112.000 acres in potatotes this year, a falling off of 38.000 acres from 917. The decrease in the New Brunswick potato acreage is about the same There is not a state in all New England that has more potatoes planted than last year.

If there is a full bumper crop of potatoes this year there will probably be enough to go around; if we have as much blight as last year it is hard to say how short potatoes will be or how high the price will be, but it seems probable that with average blight conditions, the crop will be short and the price high.

The test on the Annapolis Royal School plot last year showed that the unsprayed plot gave 75 bushels per acre while the sprayed plot gave at the rate of 221 bushels per acre. At St. Anne's College at Church Point, the plot sprayed under the direction of Father LeChantoux gave 300 bushels per acre while the unsprayed portion of the field yielded at the rate of 150 bushels per acre. Tests at various stations over a period of years show an average increase of from 90 to '00 bushels per acre due to spraying.

Bordeaux made according to the 4-4-40 formula to which any of the common poisons may be added with safety is the standard potato spray. Bordeaux may be applied in any way that will wet every portion of the plant. The best method of application is of course the traction sprayer or a power sprayer and a spray gun. A hand or barrel sprayer or even a knapsack sprayer will do good work if one takes enough time or if one has no other means of applying the spray. a common garden watering can or a bucket and a whisk broom may be used. The idea is to wet every portion of the plant by one means or another. Apply the first spray if possible before July 20 and repeat every two weeks until frost.

In one field last season the sprayed plants remained green for 40 days longer than the unsprayed The increased yield in that case was slightly over 200 bushels per acre. Every day a field is kept green it stores or grows about 5 bushels of potato tubers per acre. Three days growth will pay for all of the material and labor for spraying five times.

No one can afford not to spray their potatoes this year.—By G. E. Sanders, Dominion Entomological Laboratory. Annapolis Royal, N. S.

HORTICULTURE

WILD BIRDS THAT ARE FARMER'S BEST FRIEND IN FIELDS AND ORCHARDS

Birds are gardeners' best friends. This has been said many times before, in many ways, by many writers and observers. But it is one of the things that can bear repetition, and if anything new and compelling can be said, the repetition will be well worthy of attention. Besides, very, very few understand the extent of the birds' help in raising each year's crops.

When the writer was a boy on a farm, birds were loved in a way and their songs were appreciated; but in their relation to the crops they were regarded as enemies rather than helpers. The red-winged black-bird was thought of as the robber of planted corn, not as the devourer of cutworms; robins, thrushes, purple grackles, and many others, were regarded as cherry thieves, not as the slayers of worms and insects innumerable that mar fruit and cause imperfect vegetables; the kingbird was looked upon with favor because he killed the flies that bit us—which was a small matter, not because he killed the flies that sting fruit, lay eggs in it, and make it "wormy"—which is a very large matter.

One who begrudges birds the little fruit which they may eat in the fruit season is apt to forget that the fruit season is very short, while these helpers are working for him the year round. In the winter the woodpeckers, nuthatches, and brown creepers, are literally climbing up his trees—gathering insect larvae and eggs from trunk and limbs, bark creases and knot holes. In the spring, when leaf and flower buds are bursting, when all foliage is tender, and insect larvae begin to devour, warblers, greenlets, and kinglets come from the South by hundreds to search every delicate crevice and cranny of leaf, bud, and blossom; and were it not for these mighty pigmy hunters, our trees, fruit, and vegetables would literally be at the mercy of insects. Then, all summer long there remain with us bluebirds, wrens, robins, grosbeaks, kingbirds, flickers, orioles, thrushes, catbirds, all of which, while incidentally building nests and rearing young, spend most of their time protecting our trees, fruit and vegetables.

The greater portion of the food of these birds consists of noxious insects; and when a bird is not nesting or singing or sleeping it is usually searching for food.

It should be noted, also, that most birds feed their young entirely upon insects; and the open mouth of the hungry bird is proverbial. Most of our common birds raise two broods a year. Think of the number of insects necessary to feed from twelve to sixteen young wrens, or eight or ten young robins! Young birds grow so rapidly that the amount of food they eat is simply astounding. I have held my watch on a mother oriole for hours while she fed her young, and she would come with food every three or four minutes, very seldom failing to come within five. When young birds fill the nest this process goes on, with only short intervals, from early morning until evening.

The important question for every one, however, is, how shall the birds be induced to gather their insect food in his particular garden?

A number of suggestions will here be made, but the first and the most important is, give the birds water. Last spring I took a wooden chopping bowl, placed in the bottom of it a chunk of sod, from the roots of which I had washed most of the dirt, filled it with water, and set it on a post which I had driven down in the middle of my back lawn. My flower and vegetable garden were only a few paces away, and both lawn and garden were surrounded with trees.

There was scarcely a day during the summer when birds did not come to drink and bathe. The post was made sufficiently high to protect the birds while bathing, from the cats; and they liked the sod in the water, as it made a good safe bed for them to bathe upon, and the long spears of grass sticking above the water gave them confidence.

The reflection from the surface of the water, like that from a mirror, could be seen for a long distance, and this bird bath became the centre of bird life for the whole neighborhood. Robins came hopping upon the lawn to it; kingbirds descended from the clothes-line; the flicker shot down from his nest in a nearby trunk; orioles came from a neighboring orchard; grosbeaks crossed the road from their nest in an adjoining yard; catbirds ventured from a clump of shrubbery a block away; blue jays darted in, now from one direction and now from another, without revealing the locality of their home; bluebirds dropped down occasionally as though out of a clear sky; and all the while the wren, whose nest was in a box in a corner of the yard, seemed to consider this his private bath.

These birds in coming and going visited every part of the yard—trees, garden, bushes, fences.

It would have been best for the garden had the bath been placed on a stake about two feet high right in the middle of it. But I placed it in the lawn for the pleasure of watching the birds. Robins would almost invariably hop across the lawn to the bath, picking up half a dozen worms and beetles as they came; the kingbird would sit on a wire clothes-line and dart out every few minutes to capture an insect; the orioles would stop, either coming or going, in two plum trees to feast on caterpillars; the blue jays would often perch on near-by posts, or even on the rim of the bowl, to watch for the movement of insects in the grass, and every few moments they would dart down to seize them; the flickers found a table spread with their favorite dainties in an ant-hill a few rods distant; the familiar clicking notes of the grosbeak were heard for some time as they fed in the box-elders, before descending to drink or bathe.

Birds are always in search of food. The necessary thing in securing their services for one's garden is simply to place in or near the garden what will attract them to it. They will do the work as they come and go. And it is this coming and going process that is important, for it brings many birds to one's help.

Some, to attract birds, put up nests for them—for wrens, martins, and bluebirds. It is true that where any birds are heard and seen, other birds are apt to be attracted, as though to see what is going on. An extreme case of this attraction is seen when a snake, cat, squirrel, or jay assails some nest. All the birds of the neighborhood are gathered at the cry of the victims. But it is also true that among birds there is a general understanding that wherever a bird builds its nest, a certain area around that nest belongs to the owner. I have seen the kingbird, whose nest was in a solitary tree, attack every bird that approached. I have seen robins unceremoniously hustled out of trees where blue jays had their nests; and not long afterwards I have seen blue jays hustled out of trees where robins had their nest. To be sure, the blue jay is an egg-eater, and that fact would account for the attack upon him; but the robin never molests a nest, and the attack upon him is due to the fact that the region for some distance around a bird's nest belongs to the birds that built it, and every ther bird is regarded as an intruder.

I once placed in my back yard, close beside a bird bath, a home for a pair of bluebirds. The result was that the bluebirds thought they owned the yard. Many a fracas did I see between them and other bluebirds that happened in. To the jay that came to the bath to drink, the male bluebird gave no peace, but kept him busy ducking his head to save it from his strokes. And a robin that, after bathing, rose in lumbering flight to the top of a high post, the bluebird plunged into and actually knocked to the ground.

If the bath is put out early in the season the birds will discover it and build their nests in various places in the neighborhood convenient to its use.

In connection with the bath it is of great importance to erect two or three high posts, and between two of them at least to string a tight wire or rope. Simply by focusing my camera upon the top of a high post placed in the middle of my back yard, I have secured the photographs of many of the birds that entered the yard during the season.

These posts serve as perches from which the birds watch for insects moving on the ground, in the grass, or among the leaves of vegetables. The kingbear will one moment dart into the air to take a fly, and the next, descend to the ground to seize a beetle. The blue jay may be seen cocking his head now on one side, now on the other, and every few moments dropping to the lawn to take an insect. Who

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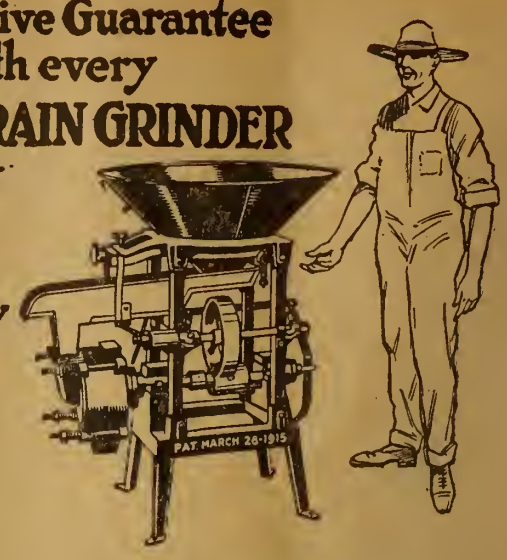

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has not seen a red-headed woodpecker perched on a post by the roadside, and wondered what he was doing there? I one day held my watch on one for five minutes, and during that time he descended to the ground for insects five times, and took one in the air as do the flycatchers. He was simply using the perch for observation. Such posts in our gardens give the birds twice the chance to see injurious insects which they otherwise would have.

If one thus attracts birds to his garden he will find that they soon learn to be on hand when any plowing, spading, hoeing, raking or weeding is going on; for it is when the soil is disturbed that worms and insects are brought to the surface and in approaching near to the worker to secure them, the birds, especially robins, become almost as tame and bold as chickens.

Black-billed cuckoos, kingbirds, orioles, are all very active in destroying bettles, grasshoppers, spiders, weevils, caterpillars, ants, and click-beetles, the larvae of the latter being among the most destructive insects known. The grosbeak is the particular enemy of the potato beetle, while the robin, the house wren, the bluebird and catbird are all shown to subsist mostly on animal matter, the greater portion of which consists of insects.

F. H. SWEET.

LIVE STOCK AND THE ORCHARD

There has been in Western agricultural practice a strong tendency for several years toward specialization. In so far as this has meant for more intensive methods and for greater intelligence and skill devoted to the production of special crops or special farm products, the movement has been worthy of high commendation. Weaknesses have been found in the system, however, and the trend of today is away from extreme specialization and toward diversification in the handling of the Western agricultural farm holdings.

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A fundamental difficulty for the man of limited means in any plan of high specialization is that he does not, and probably cannot afford to prepare himself for a season of loss. It is not always entirely well with a specialty. Whether it is with the cereals or the forage crops of the field or the crops of the orchard, there comes a season when conditions are unfavorable and the income is small. With the fruit grower, furthermore, there may be the problem of the orchard not yet in bearing and diversification offers at least part solution for the problem of maintaining the family until the orchard is of bearing age. Diversification, therefore, does not run counter to the best interests of the fruit grower, but on the other hand, assists in increasing his income and in staving over certain periods when the orchard is young or when, for some reason, it does not yield in abundance. A modern slogan that is now quite popular in the agricultural field is the warning not to put all the eggs in one basket.

There are four direct reasons why the orchardist should be able to find a use for live stock in connection with his main business, which is that of fruit production. In the first place the live stock furnishes an additional source of income and often contributes directly to the support of the family by furnishing animal products for home consumption. Second, live stock may be made to furnish a market for many of the crops grown by the orchardist between the rows of trees. Some of the crops, such as legumes, roots, grains of various kinds, can, as a rule, be most profitably marketed through live stock. Third, the orchardist needs live stock for the purpose of maintaining soil fertility. We find that more and more fruit men are giving consideration to the question of fertilization and we all recognize that one of the cheapest and most efficient means of maintaining the soil in the best possible physical condition for maximum production is through the use of farm manures secured through live-stock keeping. There is a fourth reason why the orchardist should at this particular time think seriously of live-stock production. This is because the leaders of the American overnment today are calling for more animals and more animal products. The larger share by far of the needs of the nation in this direction will, of course, be taken care of on the ranges and on the farms. The fruit grower, however, can aid materially in this direction, and if a few head of live stock were kept on the average fruit farm of the West the sum total would be of real assistance in meeting the present-day needs of America.

Granted that live-stock keeping is feasible, we may immediately consider the kinds of live stock that are best adapted to the fruit farm. A few horses will always be kept, but many orchardists question the advisability of trying to breed horses in connection with an orchard plant. Beef cattle are produced most successfully and profitably where there is ample room and cheap grass. In a similar way sheep have, in past years, been regarded as better adapted to cheaper lands that are devoted largely to grazing purposes. In the past to or three years, however, hundreds of small flocks of sheep have been bought by the farmer and it will only be a short time, if the present tendency prevails, when sheep on the Western farms will be as common as they have for years been on the farms of Ohio and Indiana. There is a possibility of using a small band of sheep in connection with the orchard. For the average man engaged in fruit growing, however, the dairy cow and the brood sow lend themselves better to his needs. These two classes of animals fit well together on the farm and make a splendid combination for use in connection with the orchard.

Those who are keeping in touch with dairy conditions of today feel that the time is not far distant when dairymen are to be paid well for their work in producing milk and butter fat. Prices

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have not been adequate and the dairyman has been losing money for many months. The result has been the selling of a large number of dairy cattle and we will unquestionably soon be face to face with a condition in regard to milk and butter-fat production that will mean one of two things—the dairyman will be well paid or the consumer will do without dairy products. I am familiar with one of the well-known irrigated districts of the West where many of the farmers have made a specialty of dairying. Two of the very best herds of that tract that have been tested and have a wide reputation for high production are now offered for sale. When the best of dairymen are thinking of quitting the business it is well for us to think seriously of the future. It is my opinion, confirmed by many experienced men with whom I have talked, that now is a mighty good time to get into the dairy business. Good cattle are being sold in many sections at quite reasonable prices and, as before indicated, there can be no other outcome than such prices for dairy products of all kinds as will enable the dairyman to meet all costs of keeping the herd and have a reasonable profit for his efforts.

In the orchard may be produced corn, peas and oats, and other crops for silage. The production of legume hays such as clover fit in well with the fertilization of the orchard and give the orchard dairymen the very best roughages for milk production. If the silo is not advisable, root crops can be grown between the tree rows to wonderful advantage. Grains may be purchased or may be grown in connection with the orchard. The combination of legume hay for roughage, of either silage or root crop for succulence, and of our Western-grown grains for concentrates, gives exactly the right kind of ration for heavy milk and butter-fat production. The grains that are needed are barley and oats, in addition to bran, which is now one of the relatively cheapest feeds that can be bought in the market.

The dairy cow, therefore, fits in with the orchard plan for between-the-row crops and not only furnishes the family with highly-nutritious foodstuffs, but in addition gives the fruit grower a week by week or month by month cash income to supplement the income from fruit production.

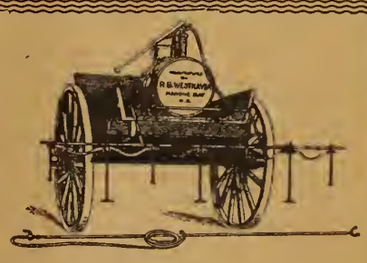
Swine fit in well with dairy cattle because one of the best of all feeds for growing pigs is the skimmed milk, which on many farms is a by-product of the dairy business. Fundamentals in successful swine production are pasture for the brood sow and pigs; by-products such as from the dairy for supplementing other rations and for keeping down cost of production, and concentrates for finishing swine for market. All of these feeds, to a limited extent at least, can be produced in connection with the fruit farm. The pasture could be legume pasture, either alfalfa or clover. In addition special between-the-row crops such as peas and oats, rape, kale and other crops of a similar nature can be seeded for hog pasture. Skimmed milk, unsalable fruit and wastes from the household may be used in connection with swine feeding. In addition there will be needed concentrates for fleshing swine for market. At present prices of feedstucs, shorts and barley are probably the most economical feed to use in swine feeding. A nitrogenous supplement should be fed in addition and skimmed milk, or clover hay are feeds valuable in this connection.

There are a large number of questions of breeding, feeding and management that should be considered in connection with dairy cattle and swine for the orchard. Time, however, does not permit extensive treatment of these problems unless there is some particular point that needs amplification. It is not only true that dairy cattle and swine are best fitted of the farm animals for use in connection with the orchard, but in addition it is peculiarly appropriate that these animals be bred at this particular time, since of all the animals of the farm the dairy cow is most efficient in that she provides more human food from one hundred pounds of feed, through her milk, than can be obtained through the means of any other animal product. Swine rank second in efficiency to the dairy cow.

There is one other branch of the live-stock industry that should be mentioned at this time, one of the great

(Continued on page 702)

IT PAYS TO SPRAY POTATOES



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MILKING SHORTHORNS AND MILK RECORDS

The importance of keeping milk records for Milking Shorthorns cannot be overestimated. It would be claiming too much to say that it would not be possible to produce high-class milkers in the absence of such records, but it is not possible in their absence to tell even approximately how much milk an animal will give in a year. A man may have followed the dairy business for many years; two of his best producing cows may stand side by side under his own immediate handling; yet he may be in error as to which is the higher producer, though he may have milked them through several lactation periods.

Keeping the records of milk production is of great importance in Milking Shorthorns, for a reason that applies to all the breeds and types of milk and meat producing cattle. It is this: in the absence of such records the man who invests in their class of cattle has no sure guaranty that the animals which he buys are really the true Milking Shorthorns. He must rely upon the word of the seller. The latter may be honest in his representations, but if he does not milk his cows he ought to know that they are not Milking Shorthorn. If he does milk them but keeps no records he may be deceived himself as to the relative status of production in his cows.

Milk records when kept should be properly accredited by some outside authority. Where this is not done, a designing man may make his own records. It is to be hoped that this is not frequently done, but the temptation to do this is always present. Many have an aversion to keeping records, based on the erroneous view that it will call for much time. When properly equipped for the work it should not take more than 15 minutes daily to do the marking in the stables. The equipment consists of properly prepared milk sheets and scales to weigh each cow's milk as it is taken. The milk sheet for the time being is tacked up in the stable. The plan most commonly adopted in previous years to check the records was through some official of the experiment station in each state, but this work is now being turned over to the person in charge of a cow-testing association where one exists in the locality. Some expense is involved, but it is small, compared with the benefit.

These cow-testing associations will result in great good to the milk industry. But no class of cattle will be helped more by their presence in a neighborhood than the Milking Shorthorn. They have shown conclusively that average production of the Milking Shorthorn stands up well even when compared with the dairy breeds. The breeders of this class of cattle will do well, therefore, to patronize such an association when the opportunity offers. The milk record sheets will be sent without charge to all members of the American Milking Shorthorn Breekers' Association when applied for.

A practice is becoming all too common at the present time among breeders of this class of cattle that may tend to discourage the keeping of milk records. Quite a number of breeders of Shorthorns are securing Milking Shorthorn males to use upon their females. They are finding that when they con say that their bull calves are the progeny of a bona-fide Milking Shorthorn bull, the result is a much readier sale and higher prices. This at least is true in many communities. The fact that such bulls are coming to be used more than formerly will certainly tend to improve the milking qualities of the animals where they are used, but it should be remembered that this plan will never in itself make genuine Milking Shorthorns. It is impossible to make a Milking Shorthorn sire in one generation, that is, as the outcome of one instance of mating, the dam being a beef Shorthorn and the progeny of such mating being raised on the dam. It would not be possible to produce a Milking Shorthorn from several generations or indeed any number of generations of such breeding in the absence of handmilking. It would also result in reducing to some extent the beef-producing qualities in such a herd.

This practice, however, it is to be feared will be very successful in distributing males called Milking, because they are the progeny of such a sire, when they are not the real thing. The men who practice this may raise all such males on the dams, hence when under one year old they will carry more flesh than the males in real Milking Shorthorn herds in which the young males are hand-raised. We all know the magic influence which much flesh has on the average purchaser of a young bull.

The unfortunate feature of the method of breeding is that it wrongs the man who buys. The young bull thus chosen is taken into a herd, it may be of fair, or even good milking qualities, with the result that in all probability the milking standard will be lowered. The owner of the herd is not sufficiently informed as to what a Milking Shorthorn is. He pays a high price for not possessing this knowledge. It also puts the breeder of real Milking Shorthorn males at a disadvantage when making sales. Such a trade is legitimately his, but much of it he does not get.

May it be remembered by all who are seeking Milking Shorthorns, males or females, that they should be the offspring of several generations of good milk producers. This at least should be imperative in the case of the sires, and it should apply to the dams in the near ancestry of the sire, as well as in the near ancestry of the dam. This of course cannot be known unless the records of the milk production are kept. No breeder, whatsoever may be his skill, can produce genuine Milking Shorthorn in the absence of milk records.—Thomas Shaw in Breeders' Gazette.

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Edmonton, Alberta 3

tion as the dairy cow is receiving. He will never be able to approach the dairy cow in economical production or in producing a food of such vital importance to the welfare of humanity as the dairy cow.

Jordan, director of the New York Experiment Station, found that for every 100 lbs. of digestible nutrients the cow returned 139 lbs. of milk which contain 18 lbs. of edible solids. The pig on the same amount of feed returned 15.6 lbs. of edible solids; poultry, dressed, 4.2 lbs.; the steer, 2.8 lbs.; the sheep, 2.6 lbs.

Henry says: "The cow easily leads all farm animals in her power to convert the crops of the field into human food, with the pig second, poultry following, and the steer and sheep coming lowest."

The Ohio Station estimates that only 7.7 per cent of the cow's feeds can be used as human food. Further, the food which she provides from the coarse fodders and by-products is the most refined and essential to human welfare. This we conclusively proved by the series of articles Dr. McCollum of John Hopkins University wtire for us and which we published several years ago and again last winter in our columns.

Here we have in a nutshell the reason why the dairy cow holds such an important place in our agriculture to the human race, and why no other animal can replace her.

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CLEAN-CUT ADVICE ON FEED BUYING

"Feed Inspection for 1917", a Wisconsin Department of Agriculture bulletin, discusses the present problems in feed buying and lists analyses of various products being offered on the market. In opening, it deals out a concentrated portion of advice which has the additional quality of a good feeding ration of being readily assimilated.

The problem facing the dairy farmer buying feed is not, so it advises, "where or how can I buy a ton of feed at least ocst", but rather, "how can I provide for the growth, production, and maintenance of my stock at least cost".

On the proposition of buying low grade feeds the authors of the bulletin tersely remark:

"A pound of good feed is worth a ton of worthless feed, and it is more economical to pay $50 a ton for some feeds than $20 for others. Only a few days before this was written, the inspection service received a letter from a feed dealer asking about the merits of a certain feed sold under an attractime name. The dealer said there was a heavy sale on the feed because it was cheap. A look at the guaranteed analysis showed that the dealer was right as to cause unless there was a big shortage in roughage in that vicinity. The guarantee and also the analysis showed that the feed was of a low grade. Only as a lightener for heavy feeds was its use justified. Roughage is roughage. It makes no difference, so far as results are concerned, whether it comes out of a bag labeled with a fancy name, or whether it is taken from the straw pile. The farmer may fool himself, but he cannot fool his stock. Of course, all roughage has not the same value, but no roughage is a successful substitute for a concentrate."—Hoards Dairyman.

SUBSTITUTING OLEO FOR BUTTER

It has been noted many times that when oleo is substituted for butter, there are fewer pounds per week consumed. In discussing this subject several years ago in the United States Year Book of the Department of Agriculture, Dr. A. E. de Schweinitz said:

"This product (oleomargarine) was furnished to the inmates of a certain blind asylum without their knowing its character. They ate less and less every day, and finally altogether refused to use it, saying that it was undesirable. This was the natural rebellion on the part of the digestive organs to the use of a mixture of fats which was not adapted for the purpose to which it was applied. While recently engaged in an examination of samples of oleomargarine, an employee of the Bureau bio-chemic laboratory under took to substitute a good brand of oleomargarine for butter at his meals. After a few days he claimed that this had caused indigestion, and he would not use it any longer.

"Without entering upon a discussion of the process of digestion in the animal body, the action of the pancreatin appears to be most important in the emulsification of fats. An artificial digestion, imitating as nearly as possible the conditions obtaining in man, shows that butter is far better emulsified than either cottonseed oil, oleomargarine, o rsuet, and consequently more rapidly digested. The undesirability of oleomararine is proved again by the fact that in hotels, boarding schools, and public institutions where oleomararine and butterine are furnished instead of butter, there is less used."

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GOOD FEEDING AND GOOD COWS ALWAYS PAY

A wise, close thinking Wisconsin dairyman recently wrote us to this effect:

"Talking about the high prices of feed I will say that I never saw the time yet when feed prices were so high that a good cow would not pay a profit on what fed she consumed providing she was fed to her full capacity. I might say further that I never yet saw feed so cheap that it paid to keep a poor cow."

There we have it; the true line of measure between cows and feed. It sems to be quite a difficult thing to bring the average cow owner up to that standard of judgment and action. But it is a safe rule to follow, one that the cow owner can trust almost with his eyes shut. The wonderful spread of the cow testing associations in Wisconsin testifies to the fact that there is a large increase of farmers who are being converted to that idea. Once more we state the rule. It always pays to feed a good cow up to her capacity of production no matter how high priced feed may be. It never pays to keep a poor cow no matter how low priced feed may be.

There follows a third conclusion: It will pay richly to test the cows in the cow testing association and find for sure which are the good and which the poor cows.

FARMERS AND BREEDERS

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LIVE STOCK.

WHEN BUYING HERD SIRE GET A GOOD INDIVIDUAL FOR BREEDING TELLS TALE

The sire is half the herd. Sometimes one is inclined to think he is the whole herd. He makes or unmakes your herd. Show me your progeny and I'll tell you what kind of a sire you have. Go into any small town and look at the kind and quality of horses tied to post, railing, or in livery stall and if you are any judge you can tell what kind of stallions are in use. Watch a community unloading pigs from sled or wagon preparatory to leading in car, and if you are a judge of hogs you have a pretty fair idea of the character of boars in use. Note the quality and kind of cattle shipped and without a doubt you know a good deal about the bulls used in the country. Incidentally, you know something of feeding methods.

Why? Because blood counts. Because breeding will tell its tale, in uniformity of get of well-bred sires, in uniformity of color, of shape, of vitality, of breed characteristics, in everything that makes for improvement. Lack of blood, lack of breeding also counts. It counts as much as blood in lack of uniformity. With a bull of no breeding you get all colors, all sizes, all shapes, all degrees of efficiency. No improvement, no nothing. What it does get is disappointment. Then why not buy a good sire?

If breed does not count, one ought to find the best stock in the world where good principles of breeding are not followed. One ought to find a Jean Armour, a Rauwerd or a Duchess Skylark Ormsby in among common cows in a common ill-bred herd. One ought to find a Dan Patch once in a while where light horses are bred yet no attention to breeding, to feeding, to selection is given. Do we? Are the great sires of the Holstein, Guernsey, Ayrshire, Jersey, Brown Swiss breeds with offspring prominent for their known production, a matter of chance? Certainly not. Corn production of one hundred bushels and over would never have been reached if corn had not been bred up. Pigs weighing one thousand pounds and more are not the result of using a poorly bred, poorly selected sire. Carnot, that wonderful Percheron stallion, was the greatest son of the greatest son of famous sires for five generations back. They knew when he was to be foaled that he would be no mediocre horse. Breeding does count. Blood, concentrated along definite lines with a definite purpose in view, must count. It counts most through the good herd sire.

In buying a herd sire it is certainly wise to buy a pedigreed sire. Even if you have only a grade herd or a herd of mixed breeding you are safer to buy that kind. You then at least know that the blood of such a sire is pure. Each of his ancestors is on record as being of the same breeding. The ancestral blood may have been good or bad, but at least you have noted mixtures of distinctly different purposed individuals; as, for instance, a beef blood mixture in a dairy herd sire, or trotting blood in a draft horse sire. You have not only the word of the man you buy from, but you have the word of the association on whose books he is recorded and that in turn is backed by the thousands of breeders whose interests are centred in keeping blood lines pure and improving same. "Just as good as a pure-bred," or "he is a pure-bred but he has not papers," should not go unless you know that his dam and sire were registered and you were certain of his identity as their son.

But, do not buy a name. Pedigree does not make him. The word "imported" does not make him. Some people lay a great deal of stress on the fact that he had been "shipped in." That doesn't make him. "I bought him from M——". That doesn't make him. Pedigree counts, imported if from a good family counts, if bought from a breeder of repute counts. It counts more when you have to sell him or his progeny that he will count to you. These all count, but along with that you must and should buy a good individual. Some men can afford to buy pedigree and family name. Quite often such animals make good but, for you, don't take a chance.

When you buy, buy health and vigor first of all. You can not afford to buy a sire which will impair or weaken the vitality of your herd. This cannot be stated too strongly. Susceptibility to disease, hereditary physical weakness—avoid as you would the devil. It spells disaster. The full constitution, heart girth—large, in other words—the full, bright eye, the vigorous, alert, active, appearance; those are the things to look for. Don't come away without them. A good, vigorous, strong, healthy herd sire is what you want. Then get that kind to head your herd, be it common cow, grade or pure-bred.

Buy masculinity. It is a male you want. Be sure you get it. A good bull should stand squarely on his four feet and impress you with his power. He fears neither you, the devil, nor Kaiser Bill. All he asks is to get a chance at some other bull and he'll show you he is master. He is every inch a sire. Masculine head, broad muzzled, large nostril, bright, large eyes far apart, thick horn, backed by a full back and crest with a bellow that is as masculine as his appearance would indicate; not coarse withall; refined power; a well balanced fellow with straight back; wide, deep ribs; long, wide, level pelvic arch; a well hung scrotum with rudimentary teats of good size placed far apart. Masculinity in a sire means prepotency; it means that you will get in numbers what you buy as an individual.

Then, too, buy size. Do not buy the son of an immature heifer, a heifer that has not attained some maturity of body before being bred. A Holstein bull ought to weigh a ton when mature and as a year-old or two-year-old he should show that he will. Growthy—that is the word. The dam must be large, likewise the sire. Your stock will get small enough, quick enough, without helping it along with an undersized bull from undersized parents.

Buy Size, Buy Masculinity, Buy Health, Buy Production.

One may buy health, masculinity, size, and yet not get what you are after. You want a uniform, vigorous, well proportioned, attractive herd that will produce. Hence, you will have to buy from a producing herd, from a dam that is an economical and large producer. Here is where records will help. The seven-day record is good, the thirty-day is better, but the only record that ought to go with you is the record for the year, better still for years. The sire transmits this power from dam to daughter, the power to produce more milk on less feed. Then, too, one should see that the dam is not a tough milker, that she has a well balanced udder with teats well placed, one on each corner, of right size, far apart. One must see that she is feminine in character, but has the vigor, size, and form perfection you want in your herd. The better your herd, the more particular you must be. The better the breeding, the quicker your herd will be among the best. Can you afford to take the time to develop your own herd in efficiency, in form, when by buying a good herd sire you can take advantage of patient, careful, systematic breeding of men more skilled than you. Time is too short. So buy as good a sire as you can buy. It will pay.

And when you do buy one, take care of him. If he is half the herd, he is entitled to the best stall in the barn,

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the best of care, the best of attention. Feed him poorly and he will loose in vigor, in size, in health, in prepotency. You don't want that. If you ever become famous as a breeder it is because you were fortunate enough to possess and use a good sire. He will make you if he is a good one. He will break you if a poor one. That is what is killing so many dairy farmers today, poor sires and poor feeding methods.

How much can you pay? Not as much as you pay for a poor one in the final reckoning. If you have but ten cows to replace with ten offspring and those give but one quart of milk night and morning more than their dams, and possibly extend the lactation period a month or two, it will mean at least 50 lbs. of butterfat. At forty cents a pound it will mean $20 each or $200 a year, or $2,000 during the ten years of service in your barn where they displace their poorer dams. How much? That is for you to say. If you buy a tried sire there is no chance. It is the herd sire you buy that will make you or break you.—J. Bower in Hoard's Dairyman.

WHY SO MANY YOUNG CALVES DO NOT THRIVE

Riding through the country in summer one sees a surprisingly large proportion of calves which do not look as if they were thriving as well as they might. Since a great deal depends on getting a good start with a calf, as well as with any other young animal, it might be well to investigate conditions and find out what is the reason for such a lack of thrift. Three things may be taken for granted as the chief causes, says E. E. Rockwood in Hoard's Dairyman.

First, we will mention lice. Usually a spring calf is kept for a time in a stable or until the weather becomes warm when it is turned out in the pasture. Even a very short time will suffice for it to become infested with parasites if such are permitted in the stable, and it is surprising how many otherwise up-to-date and comfortable farms are thus infested. Since lice and mites multiply rapidly when the warm weather comes, a calf would soon become badly troubled with them and no animal under such circumstances could possibly thrive. One has but to notice how many calves and other cattle are rubbing and licking themselves to see that cases of the kind are quite common. Lice are present many times when not suspected and a thorough examination should be given on general principles and, if found, treatment should be promptly applied. One of the coal tar preparations or sheep dips used according to directions will be found efficacious in destroying the parasites. Probably in nine cases out of ten the cause of the unthriftiness will be located without going any further.

However, there is another thing, especially in the market milk secretions, which contributes to the underfed, unthrifty appearance of the calf. This is an unsufficient allowance of milk. Tempted by the ready cash which it commands, owners cut down the milk ration often almost from the very first and substitute something else. When a calf becomes older and can assimilate other food, this substitution will do no harm. However, there is no substitute which can successfully take the place of whole milk at first and two weeks is none too long to feed this before replacing a part of the ration with that from which the cream has been removed. For best results a generous ration of skimmilk should be fed for months, the longer the better. All summer is not too long for the spring calf to get its mess of separated milk morning and night and this should be supplemented all along with a grain ration of a kind to promote growth, such as bran, middlings, oats, or oil meal, with a little corn, either whole or ground; in the latter case, not placed in the milk but fed dry. Calves require some salt also but should be permitted to help themselves rather than have this added to their grain. Fresh water should also be supplied regularly. As a rule, pasture which calves get is not very nourishing and many times they will do better confined in clean, loose stalls where they are not exposed to flies and extreme heat. The calf pasture, too, is frequently shared with hogs, a condition not conducive to thrift. Weeds usually abound and little food of any value grows where maintained year after year as a joint feeding place for different kinds of live stock. Kept in a sanitary stable and provided with clean clover or alfalfa hay, in addition to its milk, a calf will do better than in the average pasture.

Still a third factor contributing to unthriftiness in the summer calf is bowel trouble. The digestive organs are weak in the young animal and easily disturbed. I have known a bad case of indigestion caused solely by an overfeed of milk. This required weeks to overcome when the calf was off its feed and suffering from scours. Good, healthy calves should have the allowance carefully watched until they are well established, else they will overeat and do themselves harm.

In these days of stress and strain so much depends on our live stock that each individual should watch carefully to see that nothing is neglected which can contribute to the cause of winning the war by making the very most of every bit of our resources. It is certainly poor business to allow young stock to depreciate, become undersize, and lack in thrift when simple precautions and insufficient feed will keep them growing. A stunted calf or pig or colt will never make the animal it would have been if properly nourished. So it proves to be a costly mistake to scrimp the young calf on its natural nourishment or to allow it to become the harboring place for parasites which sap its vitality and hamper its growth.

CHEAP FEED FOR THE BROOD SOW

1. Too little value is placed on cheap feeds. Clover and alfalfa hay are very much relished by breeding rition constituents, protein and mineral matter. Roots are nutritious and insure health. Vegetable, fruit, and kitchen refuse materially reduce the meal requirement.

2. Exercise is too often overlooked. Confining a brood sow in a small pen is bad treatment and usually accounts for dead pigs. A much better plan is to give her access to the barnyard. The horse manure pile will prove attractive and valuable to her. If she cannot visit the manure pile, some horse manure may be placed in her pen. It may add to her comfort; in any case it will interest her and cause her to take at least a little exercise.

3. Mineral matter in the feed during winter is conspicuously absent. Such feeds as clover and alfalfa will supply some, but not enough. Earth, salt, lime, charcoal, and ashes are all rich in mineral. Some of them, if not all, should be supplied.

4. Wheat bran is a good feed for breeding hogs. A little of it is all right for young pigs, but it is not a fattening food and should not be used in any quantity for fattening hogs. Shorts is one of the best all round feeds, but should not be depended upon entirely, particularly in the finishing period.

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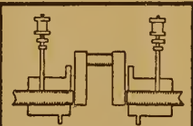

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THE HORSE

WATER FOR TEAMS

A surprising difference in heat resistance could be noted among farm teams during the recent very hot days. On some farms the horses worked righ along without let-up; on others they appeared fagged and they evidently suffered from the heat. One of the conditions commonly present where the teams worked well was adequate provision for watering the horses. The water was pure, cold and plentiful. Generally it was offered frequently. In many cases the horses had free access to water during the night.

When weather is very hot a horse at work sweats out of his body a great quantity of water during the day. It is impossibye to drink enough at the usual four waterings a day to fully replenish the water content of the body tissues and organs. As the hot day draws to a close the hard-working horse gets more and more in need of water throughout the body. He craves it. When he comes in at night, tired and thirsty, his capacity for holding water limits the amount that he can drink long before a balance between water and soldis in the body is reestablished. Perhaps the driver drags the thirsty horse away from the trough before he is through drinking because he fears too much water will be taken in and a case of colic be the result. Another chance to drink is planned but perhaps forgotten. More frequently the horse is taken away from the water tank too soon because his pause in drinking to catch his breath and allow the water to pass through his stomach is mistaken for the signal that no more water is wanted.

In well regulated city stables this difficulty is overcome by watering the horses again after supper. This is seldom done in the country unless the horses are turned out for the night. Really it is better for the horse to turn them out where they can drink at will during the night. They are wonderfully refreshed by this practice just as men are taken several times after quitting the field on a very hot day, winding up with two or three glasses of water just before going to bed. Even where horses are not pastured at night they derive great benefit from resting and eating their hay in the barnlot with access to water. In a lot not too small there is not much danger if tired work horses injuring each other in summer. Many outfits spend the nights thus during early summer, and after about this time of year or a little earlier, when the grass gets more mature, they are turned onto pasture at night. The plan works well.

In very hot weather, particularly at harvest time, some of the most efficient farmers haul a barrel or two of water to the field and the horses are watered once or twice during each half day. Those who follow this plan assert that the horses will then do far more work in hot weather than if watered only morning, noon and night. Some accounts are related of marvelous endurance and big days' work accomplished under excessive heat by horses that had water given them frequently during the day. The only objection to it is the inconvenience. But then, it is inconvenient for any one or any horse to work in the hottest days, so we might as well accept as desirable any means of accomplishing results and safeguarding the health of teams.

It is not thirst that allows a horse to be overcome with heat. It is a weakened condition of the system. Too litttle water is a common cause to this decrease in vitality. A horse like a man, craves water more than anything else in hot weather, and that of itself should be sufficient proof of the importance of plenty of pure fresh water.

HOW TO DETECT LAMENESS

A horse is lame when during action one or more of his limbs acts abnormally by reason of pain, weakness, inefficiency or obstruction. Lameness also may be a symptom of disease. Motion is necessary to make lameness manifest; but certain indications of lameness may be exhibited by the horse in repose. To detect lameness the horse should be examined when at rest and then in motion. The examiner must first determine which leg and then what part of the leg is affected.

Let the horse stand in a level place. If sound he usually will stand squarely on all fours. Departures from this natural position suggests lameness. If a front foot is placed forward, so that it is relieved of supporting its due share of weight, this act is termed "pointing" and indicates pain and lameness in that foot. If each fore foot is pointed in turn, both may be lame. If both feet are pointed at the same time they are similarly affected and lahinitis (founder) is the probable cause. Severe pain may cause a horse to stand on three legs. One foot is held off the ground, temporarily or continuously, according to the severtiy of the pain pressure. Two fore feet may be alternately elevated, or the hind feet may be similarly rested or advanced under the body.

Knuckling, cocking or bending forward of the fetlock joints when a horse is standing at ease may denote pain, but this posture of the hind fetlocks sometimes is noted in a practically sound horse. Permanent knuckling is suggestive of lameness. If the heel is raised, probably pain is present in the back parts of the foot, as is the case in corns or navicular disease. If the horse rests its weight on the heels there is pain in the front part of the fooot, as in acute founder or ringbone. Frequent shifting of the feea when standing at rest may indicate lameness but this act often is due to temporary leg-weariness and foot-soreness from a hard drive.

Cracked, contracted, ridged, enlarged, flat, steep or disturbed hoofs, pasterns abnormally upright or too much slopd (broken down), tendons bowed, filled or thickened, knees bent forward, elbows pointed outward, muscles wasted (atrophy or sweeney), shoulder held upright and leg hanging or pendulous, evidences of blistering, firing or settons swollen, enlarged, puffed or crooked joints, bony growths, sores and wounds, or bulging of parts that should be straight, as buck shins and curb, are other symptoms possibly indicative of lameness. Abnormal displacement of the feet or joints of the hind legs are as characteristically suggestive.

Lameness may become apparent when the horse is made to move over in the stall. Spavin lameness and other acute conditions of the hock joint cause the animal to bear the weight on the sound leg and hop with the lame one. On backing out of the stall chorea (St. Vitus dance, shivering or coampiness) may cause sudden jerking up of a hind leg, spasmodic elevation of the tail and twitching of that member and the muscles of the flank, thigh or quarters; or backing up may be evidenced by dragging of the fore limb.

The horse, having been examined in the stall and when standing still, next should be walked away from and to the observer, then slowly trotted away and back. When walked anad trotted free action should not be hampered by a short halter rope. "Bridle lameness" may be induced by trotting the horse with a short rein, thus inclining the head and neck towards the man and causing undue weight to be put upon the fore leg of that side. Slight lameness seldom is seen when the horse walks. Trotting brings it out, as it increases weight upon the members sustaining the body. When walking three members are always upon the ground, the feet coming up one at a time. During the trct two feet are off the ground at the same time, the horse progressing by diagonal legs. Thus lameness of an unsound member will be accentuated by the greater concussion of trotting.

If lameness is present in a fore leg the horse will throw the weight upon the sound leg, favoring the sore one, and the head will nod or droop toward the sound leg. If lame in a hind leg the hip of the sound side droops and there is a corresponding rise of the lame quarter. If the observer nods his head, keeping time with the horse, he will more easily determine which leg is affected. The veterinarian may in doubtful cases inject cocaine or eucaine hypodermically over the nerves in deciding whether the lameness is located high or low.

Chronic lamenss of a fore leg may occasion seeming "cross lameness" of the diagonal hind leg. Lameness of a hind leg also may cause the horse to bear undue weight upon the opposite fore foot. If both fore feet are lame the steps are short, the pasterns upright and the action stiff and stilty. The horse goes sore or groggy. If the toes of the fore feet turn upward during action, chronic fonder may be suspected, or the heels may have been abnormally lowered by prolonged abuse of the shoer's knife.

The beginner, if puzzled, may trot the horse upon soft ground and be guided to the lame leg by the shallow impression its foot makes upon the ground. The expert will note the

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slight hitch, impediment or "dwelling" in the flexion and extension of a limb. decide whether there is supporting or swinging leg lameness, and by anatomical knowledge and extended experience make a correct diagnosis, often impossible to the layman. Trotting upon a hard road causes aggravation of foot lameness. Soft going may accentuate high lameness. Turning the horse sharply in one direction and then the other tends to make obs ure lameness more apparent.

The symptoms of chorea often may be noticed when the horse is turning to come back, after being walked or trotted away from the observer. Chronic springholt is characterized by rythmic jerking up a hind leg. Often it affects both hind legs and occasionally is seen in afore leg. In navicular disease and spavin lameness the horse starts off lame and warms out of it with exercise. The toe of the shoe is worn down. Ringbone lameness aggravates with exercise, causes an unnaturally long step and the horse goes on his heels. Lameness from splints sidebones or corns becomes worse with work. The foundered horse goes on his heels, becomes lamer with exercise, but improves when going down hill. Navicular disease lameness increases when the horse trots down hill.

Swinging of the leg outward indicates shoulder or hip lameness as does dragging of the toe and difficulty in stepping over an obstacle. Pronounced dropping of the stifle is seen where wasting of the muscles of the stifle and thigh has followed acute azoturia. A turned-up toe indicate breaking down or rupture of the back tendon, while knuckling may indicate thickening and shortening of those parts or the presence of a high ringbone.

Before finally deciding the seat of lameness in any case, the foot should be carefully examined, no matter how plainly the symptoms may seem to point to some other part. If this is made the invariable rule, many errors in diagnosis will be avoided. A leather sole or rubber pad may cover a diseased condition and a bar shoe, or other special form shoe, always should arouse suspicion. Give no flash opinion as to the seat or cause of lameness. "Least said is soonest mended." Even the greatet expert may require hours or days in arriving at a decision.—Dr. A. S. Alexander, University of Wisconsin.

PATIENCE WITH TEAMS

With drawling word of command and leisurely manipulation of the reins a man with four horses to an 8-foot binder cut 17 acres of wheat per day through the blistering hot days of harvest. There was no hurry or excitement and the four horses kept slowly and steadily moving along at the edge of the stanading grain, always cutting a full swath and leaving the bundles nicely laid in straight windrows. The man explained that there was no use to hurry. Four horses were all he had, and they had to stand the strain. He did not dare hurry them, for as it was they kept about as hot all day as it was safe to have them. A crack of the whip or a yell would have started an extra flow of sweat and made them puff all the faster as they would try to hurry along. Then a stop to rest would have been necessary.

Men nearby who had plenty of horses drove faster, changed teams frequently and sometimes drove during the noon hour, but still most of them only cut about 20 acres per day. With twice as many horses and lots of extra work changing teams back and forth they got very little more done. Hurying beyond a natural hot-weather speed, their horses quickly got hot and kept getting rapidly hotter. The urging of the drivers to get the extra speed served to excite some of the horses and bring out a lather of sweat immediately.

The result was a good demonstration of efficiency and inefficiency with teams in hot weather. The patient policy was the most productive. Even in cooler weather the contrast is similar though less striking. The driver who is patient and pleasant and allows his team time oo turn and to move when told accomplishes much in a day if he keeps going. It is the stops that kill time. Five to ten minutes rest wastes th etime a team would take to travel across one side of a square 40-acre field. When tw obinders are cutting on the same land the one behind can hardly catc hup if once set back by a few minutes' delay. Few men realize how fast time flies when the team stands still or how far a team travels in a short space if time.

Plenty of snap is a good attribute in a farm hand, provided he keeps it under control. In hot weather one's temper needs a special guard kept over it. Slow, sure, steady motion is what performs work with the least waste of energy and we must keep within those bounds when the sun is scorching hot.

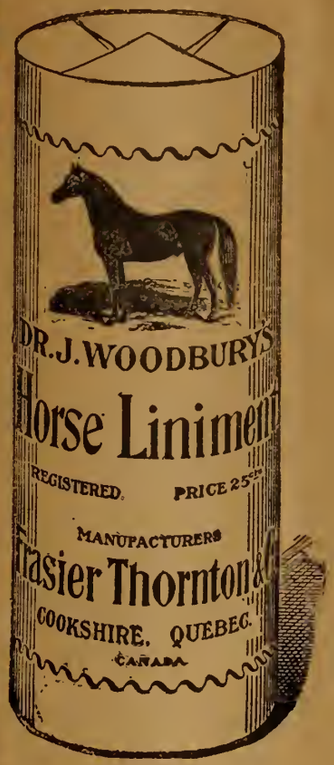
Patience with teams pays the whole year around. The conservation of a horse's energy by a careful driver saves feed, keeps the animal in good flesh and helps to prevent shoulders and neck getting sore. Then there is more power, stamina and ability to turn out good work all the time and big work in an emergency. The common tendency of farm hands nowadays to slam a team through in order to finihs a big day's work by the usual quitting time is hard on horses. It is far better for the team to take an extra hour to hake the long trip instead of hurrying beyond a comfortable gait. Extra speed always requires an extravagant expenditure of energy.

WHY PUREBRED STALLIONS

Horseman have always been ready to concede that purebred stallions have sired larger and better horses. In spite of that there have been and yet are quite a large proportion of grade and scrub stallions in service in all sections. The men who have patronized those inferior stallions must have a reason for so doing or else it is necessary to show them in definite statements of dollars and cents that their practice is in error. In order to secure such definite facts the Indiana Stallion Enrollment Board has conducted a survey in a number of counties in various parts of the state. In this survey the acutl prices received by farmers for their horses were tabulaed. Comparison was made beween he selling price of horses sired by purebred stallions and the selling price of horses sired by stallions not purebred. The result was overwhelmingly in favor of the purebred stallion in that his offspring sold for an aver of $76 per head more than the offspring of stallions not purebred.

Putting it on the basis of the service fee paid we find that if it costs $5 more to patronize a purebred stallion it pays well to spend that extra amount, because the difference in selling price of the offspring will return the $5 and interest at the rate of 1.420 per cent.. If the service fee is $10 higher for the purebred stallion there will be returned a clear profit of $66. or 660 per cent. upon the $10 invested.

Pronounced as these figures may be they are scarcely as marked as is the contrast conditions in localities where purebred stallions prevail and in localities where there are few purebreds. In sections where purebred stallions have been used for many years the country is sold out of good big geldings. In sections where purebreds have not beeen used there are horses that are begging for a market. The figures are doubtless more favorable to the offspring of the grade and scrub than they should be. It was found in the survey that quite a large number of inferior animals were absolutely not wanted by the market. If a zero valuation had been placep upon those unsaleable animals and this included in the average the difference would have probably been twice $76 in favor of the purebred stallions.—H. E. McCartney in Breeders' Gazette.



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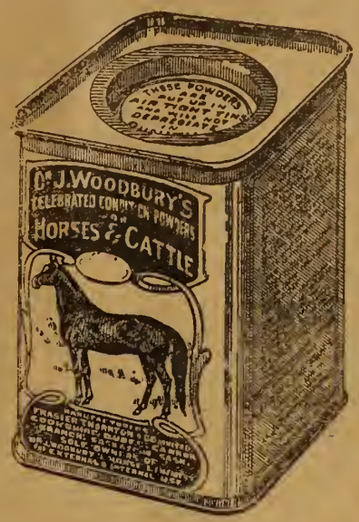

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We Know You Realize That There Are Two Sides to Every Story and That a Fair, Square Hearing is Every Man's Right

So, We, the Canadian Manufacturers' Association, ask you to read our views (published at our own expense) on the subjects of Tariff and Co-operation as presented in an address by Mr. S. R. Parsons, Retiring President of the Canadian Manufacturers' Association in Convention before this body, at Montreal, June 15th, 1918

"Speaking broadly, Canada must choose between the Tariff with Manufacturers on the one hand, or free trade without manufacturers on the other; the issue cannot be dodged and should not be clouded."

"The Tariff is not simply a matter of give and take between manufacturers and farmers. What about labor? What about railway companies, the merchants, the financial institutions, the people at large? The Tariff affects everybody".

THERE are two subjects of sufficient importance to claim our particular consideration this year and upon which we should focus our attention. I have, therefore, concluded to disregard all precedent, which, if followed, would constrain me to deal in a somewhat discursive manner with many matters of interest to our Association and the country at large.

The first question has to do with the relationship between employers and employees, and the second the problems of the tariff, particularly as affecting manufacturers and agriculturists. In discussing these topics, I am sure you will agree with me in saying that we should lay aside any ingrained prejudices or conclusions which would prevent us from reaching decisions that are unselfish, broadminded, and national in scope. As men holding a high and important place in the nation's affairs, we should feel that unless we approximate in spirit many of our members, as well as hundreds of thousands of others who have without reserve given themselves freely to the service of the country in defence of the things that we all hold dear, we are disqualified for dealing with important interests which have to do more particularly with the nation's life at home. From an intimate knowledge and association with the manufacturers of Canada, far and wide, I know that as a body they are characterized by the highest ideals of citizenship and service.

Capital and Labor."

First, then, let us consider the question which is usually dealt with under the heading of "Capital and Labor." We have been learning many things during the past four years and while all sorts of doctrines, theories, and even fads are being put before us which are more or less impracticable in character, yet it would be a great pity if the fine idealism which is being preached could not be turned to useful account as far as possible. The thing which we call democracy is revealed more in spirit than in organization or regulations. If democracy is going to be anything more than a label on an empty bottle, it must characterize our human relationships and actions. We have, perhaps unconsciously, ignored to some extent the human element in giving effect to the relationship existing between employer and employed. In the old days when in small shops the so-called "master" worked with his men, often at the same bench, and each called the other by name, there was continuous friendly intercourse which resulted in producing good relations throughout. Afterwards, with the introduction of machinery, there was brought about an industrial revolution. Instead of the small shop with few workers, there was the great factory, with many hands, so that is soon came to pass that empoyer and employee did not often meet or even know each other.

The result in many cases has been that the workers came to look upon themselves as part of the machinery of the organization to be used solely in the interests of the producing capacity of the business. It was quite natural, therefore, to expect that disagreements would arise between the two chief interests involved that have led here and there to occurrences of which neither side could possibly be proud. We have now come to see that just as the human body cannot do its best work unless the integral parts are acting together, so in the case of our great industrial system, there must be a living spirit of working together in order to complete service. We have had, perhaps, more or less of the external form and have boasted too much about the body of democracy when having little of the soul. Looking around us, and especially in Old World countries, though not unknown even in Canada, there are armed camps of Capital and Labor. I have no hesitation in saying that these should find some method of union. These two classes must stand together in their own interests. There must be a meeting ground where antagonism and suspicion shall not dwell. The situation at present is aptly described by the quotation:

> "In the world of industry, employers explain too little, employees exclaim too much, economic teachers proclaim only a bias, and politicians only declaim. There is no one to interpret—no, not one."

Better Relationships.

Now, the question is as to how to bring about a better relationship. No one will question the advisability of trying to regain an attitude akin to that which prevailed in the seventeenth century, when there was a glory and a pride in trade and craft, which has been largely lost out of our industrial life. What a day it would be if we could make a song of our work instead of a dirge of our grievances! Capital, on the one hand, must realize the duty of caring for the welfare of all those associated in industry, and Labor must be ready to co-operate to the fullest possible extent in a spirit of helpfulness. My own opinion is that each individual industry will work out its own plans applicable particularly to the special conditions governing the concern. Many schemes, some of them quite elaborate, have been brought forward in Great Britain, providing for a more effective co-operation between employers and empoyees. In the United States some plans of co-operation have already been put into effect and others are being considered. Everywhere there is the feeling that the time has come when most earnest consideration should be given to this important matter. Nearly all the plans which have been put forward carry with them the idea of representation in our great manufacturing enterprises from both Capital and Labor. In some industries a committee of ten or twelve is appointed, half of whom represent the company and the other half the employees. These representatives are charged with the duty of dealing with matters such as employment, discipline, right

of appeal, wage adjustments, and joint conference. In a certain industry employees after one year's service are insured at the expense of the company, the amount varying from $500 to $2,000; in case the employee leaves the service of the company, he takes his policy along with him and keeps up the insurance if he wishes to do so. Annuities are also provided after twenty years of service.

No one industry can be a pattern for all, as the ability to deal with such questions is not shared equally. It appears to me that it is impossible for us to develop immediately a satisfactory plan of co-operation that might suit all the different industries with their varying conditions. There is, however, no reason why a start should not be made and some headway gained. The evolution of processes must be gradual; the new heaven and the new earth will not burst upon us in a day. Personally, I am not at all afraid to trust representatives of our workmen to join in plans of co-operation in the interests of all concerned. When we think of what our men from the ranks of Labor have done in this great war, coming forward argely under voluntary enlistment, and when we realize further the valor they have displayed on the battlefront, they are not only entitled to proper recognition at home, but to a consideration of their interests, which hitherto they have not had in large enough measure.

One thing appears to be certain, namely, that where individual interest, ambition, and good work are shown, these must all be recognized by both interests in the business and properly rewarded. On the other hand, the unwilling and the inefficient must not block the path of the ready and the skilful. **There can be no universal betterment applying to each and every worker in any scheme of co-operation without individual participation, if we are to hold our own against other countries and nations whose competition we have to meet both at home and abroad.** I would like, however, to see such a spirit of mutuality and co-operation engendered that the two great classes would think together and not apart. I believe this would result in such efficiency in all our organizations that we would be able to increase our home and foreign trade, help pay our war obligations, make reasonable profits, and pay higher wages than would otherwise be possible. It should be remembered that as from the ranks of Labor a very large proportion of our men have gone to the front, so when the war is over, to the ranks of Labor they will be returned. Much as we would like to see the returned men go upon our farms, yet the great majority will naturally revert to their former occupations. They will, therefore, be a charge for the promotion of their interests upon our towns and cities and the manufacturing industries in particular. We cannot begin too soon to lay our plans for giving effect to that particular form of co-operation which will fit our individual concerns best and enable employers and employees to serve one another.

Our scond great question is that dealing with

Manufacturers, Agriculturists, and the Tariff.

More than a generation ago the National Policy was brought into existence and, therefore, the great majority of men doing business to-day in Canada do not remember the hard and trying years before its introduction in 1878. At that time the country was making little headway under a revenue tariff of 12½ per cent. Our industries were comparatively unimportant and American factories supplied us in large measure with products such as have since been made in Canada. Generally sepaking, the commercial interests of the country were languishing and our bright young men were attracted in large numbers to the United States, a country being built up and prospered under a policy of protection. We are now in danger, especially on account of the propaganda of one section of our population, of failing to profit by experience, losing our balance, and blindly yielding to the demand for undermining that which has proved to be the great bulwark of our national, industrial, and commercial life.

The War-time Tariff Truce.

It was understood, when Union Government was formed, that the agitation of the Western grain growers for the abolition of the tariff would not be continued during the period of the war. This has been denied by some of the grain growers during the session of Parliament just ended, but a newspaper report of an address by Honorable T. A. Crerar, at Winnipeg, in the election campaign states:

"The Minister of Agriculture alluded to a conversation with a farmer in Toronto the other day, who asked him:

"'What concessions did you get on the tariff?'

"I required no concessions," declared Mr. Crerar. "The Tariff is not the issue at present. I feel just as strongly on the question of tariff as any man. I have not sacrificed these views in entering a Union Government. The tariff is not the isseu at present. The great outstanding issue is the winning of this war.'"

The Toronto **Globe** referred editorially to this matter and spoke of it as a "truce"; in fact it was more or less the general expression of opinion at the time of the formation of the Union Government that tariff matters would not be referred to until the war was over. The manufacturers, therefore, accepted this view and would have respected same throughout if others had done so. We have found, however, that in the Western Provincial Legislature resolutions have been passed asking for the removal of the duty on agricultural implements as a so-called "war measure." In farmers' papers and other organs there has been carried on a constant agitation against the tariff and denunciation of the manufacturers. Grain growers have recently challenged manufacturers to come out openly and declare themselves upon the tariff question. Much as we would have preferred that there be no consideration of this question during the period of the war, as all our attention should be fixed upon our national obligations with respect thereto, yet some measure of action has been forced upon us and it is therefore, necessary to deny many of the unfair, erroneous, and misleading statements that have been made for the purpose of trying to prejudice the minds of the public against manufacturers and manufacturing interests in this country.

Agriculture and Industry Interdependent.

Agriculture and Industry Independent.

Our statements should be prefaced with the remark that the manufacturers of this country, along with all other classes, are vitally interested in the success of the agriculturists and will not be satisfied until the fullest possible measures looking to their betterment and the removal of any inequalities or unfair burdens, are accomplished. It surely is not necessary to do this, however, at the expense of other classes and at the risk of ruination of our great industrial fabric, built up with great care and national efficiency. A great Toronto daily sets forth admirably the relation of manufacturers to agriculturists in the following words:

"If agriculture is the backbone of the Dominion, industry is the sinew and brawn. Each is vitally important; they are interdependent. Progress and prosperity for one invariably means progress and prosperity for the other. Their success provides food or their failure provides famine for the people. Trade balances depend upon their activity. A favorable balance swells Canada's bank roll, and the people become prosperous and very happy under normal conditions."

Reciprocity.

We are told that especially in the West, peopled so largely with American citizens of an excellent class, there is more or less of a demand for reciprocity, if not a closer connection, with the United States, which, perhaps, is quite natural, particularly among the class referred to. While as Canadians we value more than ever our friendship with the great nation to the south of us, yet we believe we have an important part to play as an integral portion of the great British Empire and in working out our own future. When there was an agitation for reciprocity, in 1911, and which certain elements in our population are now trying to revive, the majority of the people decided against it and in favor of a continuance of our national, political, and fiscal policy and entity. As nothing has occurred since to lead us to believe that we were mistaken at that time, it is perhaps well now to emphasize our views and refresh our minds on the question by referring to what the then President of the United States thought of the reciprocity campaign and of its

"Speaking Frankly and Sincerely"

The portion of this address referring to the Tariff was given in response to a direct challenge of the Grain Growers' Guide [the official organ of the agriculturists of the West] to the President "to speak frankly and sincerely and come right out into the open on the tariff question." In its issue of June 19th the Guide says:

> "The Canadian Manufacturers' Association has had its annual convention and S. R. Parsons, the president, just retired has spoken. True to the intimation given through his recent letters to The Guide, he "came out into the open" and spoke frankly about existing differences of opinion with regard to the tariff. A digest of his speech as well as a summarized report of other features of the Canadian Manufacturers' Association convention appears elsewhere in this issue. It ought to be read closely by all grain growers, for Mr. Parsons, accepting the suggestion frequently offered by The Guide, has strongly urged that a conference between manufacturers and grain growers be held in Winnipeg some time this year. The dominant note sounded by Mr. Parsons in his address of last week at Montreal was national unity —a unity which would enable the manufacturer, the workman and the farmer to live and work together in Canada for the good of the country as a whole. This desire was expressed by Mr. Parsons in words of deep fervor, and we are told that his speech was received with great applause by the manufacturers who attended the convention."

As only excerpts from the address have appeared in the press, the Canadian Manufacturers' Association have concluded to publish it in its entirety for the benefit of the public, it being endorsed unanimously by the large Annual Meeting of the Association recently held in Montreal.

effect upon Canada as well as the United States. In a letter written at the time to Colonel Roosevelt, and made public afterwards, President Taft said:

"The amount of Canadian products we would take would produce a current of business between Western Canada and the United States that would make Canada only an adjunct of the United States. It would transfer all their important business to Chicago and New York with their bank credits and everything else, and it would increase greatly the demand of Canada for our manufactures. I see this is an argument against recopricity made in Canada, and I think a good one."

We all know that Mr. Taft is an extremely capable business man as well as politician, and he recognized at once what even a measure of reciprocity, such as was then proposed, would mean to both countries. It would thus appear that our shrewd friends in the United States saw in the proposition what some of our Canadian politicians and others were blind to. The war-time measures of reciprocity that have been created are hardly a valid argument for their operation in normal times from a national standpoint. **Surely we would not be foolish enough now to want to place our country and our national existence in the condition so well described by Mr. Taft, nor are we ready to believe that our destiny lies in a severance of Empire ties.** Already Great Britain is taking steps to bind all parts of the Empire together in closer commercial relations for after-the-war trade. We in Canada have helped to create, as well as bear, heavy Empire war burdens and this ought to be followed by our full share of peace responsibilities; in fact our national and our Empire obligations must now be paramount in our thought and plans and receive greater and more serious attention than ever in the past.

Hostility to Manufacturers.

It would appear from the propaganda being waged with such vehemence against the manufacturers of Canada that the chief view presented is that the tariff is retained solely to benefit the manufacturers and to oppress all other classes of the people, the farming community in particular; in fact one of the leaders in this propaganda in a recent article, which throughout is full of abuse of the manufacturers, commences the same by quoting from Sir Wilfrid Laurier in June, 1893, as follows:

"But I appeal to your judgment in the face of the experiment of the last fifteen years under the system which was introduced by the Conservative party, which was dubbed the 'National Policy,' to say if that system was not vicious in principle, iniquitous in its terms, and dangerous in its consequences, I say that it is vicious in principle."

Now this quotation is evidently brought forward to give the farmers of the West the view that Sir Wilfrid Laurier is the apostle of Free Trade and a non-believer in the National Policy. It would have been more honest had the writer stated that when Sir Wilfrid came into power and was in the saddle for so many years he found the retention of the National Policy, as reflected in the tariff, to be entirely necessary in order that proper revenues might be raised for the country. The writer in question further refers to the manufacturers in his "Hymn of Hate" as follows:

"It is conclusive proof that the 'infant' we have so tenderly nursed for fifty years has become a selfish giant, **as ruthelss and destructive as the one we are sending our armies to resist in Europe to-day.** Never before in the history of our country has the mailed fist of special privilege so plainly shown itself."

Trade and Tariff Board.

It is therefore, quite evident that the time has come when the manufacturers of this country can no longer keep silence, either in their own interests, the interests of Labor, or the great national interests of this country. It should be remembered that the present tariff, with changes here and there, was enacted as a great national policy, not for the benefit of any one class, but for the well-being of the nation at large. No one who is not ignorant of the subsequent history of our Dominion can say that it has not justified its existence. An enormous revenue has to be raised in any case and in no other way can the amount produced by the tariff be raised so easily and fairly as by the present methods, which at the same time incidentally give reasonable protection to our great manufacturing industries. Manufacturers feel that the tariff could and should be changed here and there, and so amended that it would apply more scientifically than it does at the present time. **For this and other reasons, the manufacturers would like to see created what might be termed "A Trade and Tariff Board"; such a Board to be composed of representative men of actual experience and wide knowledge of commercial conditions and whose broad outlook and vision would fit them particularly for the proper study of these great questions so vital to our national interests, this Board to report to the Government from time to time their findings, and if after a full and complete survey of the situation, it be clearly established that the tariff is inimical to the best interests of the country at large; nay, more than that, if it is not actually essental from a national standpoint, then, I say, "Away with the tariff."**

Not Simply Give and Take.

The time has arrived when we must all face this matter in a sincere and broad-minded fashion. It surely cannot be simply a matter of give and take as between manufacturers, on the one hand, and grain growers on the other. Labor must be consulted and considered, the transportation interests of the country (now so largely controlled by the Government) must have their say, the great financial institutions of the country, wholesale and retail business, producers controlling our mines, forests, and fisheries, are all vitally interested in the question of the tariff and must clearly have a voice as to its retention or otherwise. In giving expression to the convictions of manufacturers on this matter, we should at the same time be glad to meet the grain growers of the West and would do our part to try and bring about a conference to be held a little later in the season in the city of Winnipeg; this conference to be followed by other meetings, if necessary. We desire most earnestly to co-operate with our fellow-producers and to show them in the frankest manner our problems and to be shown by them their handicaps, in order that we may each of us see where changes could possibly be made that would be of mutual benefit and help.

Industrial Protection Essential.

We would, however, be altogether insincere and dishonest did we not state in general terms that if there is one thing more certain than another, it is that manufacturers could not possibly exist in this country without the small measure of protection which the tariff affords them. The two stand or fall together. **Speaking broadly, Canada must choose between the tariff with manufacturers on the one hand or free trade without manufacturers on the other; the issue cannot be dodged and should not be clouded.** Living alongside a populous country of highly specialized industries, catering to a home demand of twelve times as many people as we have in Canada, it would be suicidal for us to attempt to compete, or develop our new country on the basis of free trade. It is, perhaps, interesting to note that, notwithstanding the enormous population of the United States and he great home markets that are open to them, they have found it necessary, in their own interests, to retain a large measure of protection by means of the tariff. Even under the present Democratic Government, reduced schedules, the average rate of duty paid on imports of dutiable goods coming into the United States for the year ended June 3th, 1916, was 30.67 per cent., while in Canada, for year ended March 31st, 1917, it was only 23.78 per cent., so that our own tariff is approximately only about seventy-five per cent., as high as the American tariff on dutiable goods. The War Tax of 7½ per cent., although added to the cost of imported goods, free and dutiable, was not proposed or desired by the manufacturers. It would appear, therefore, that those who complain of our high tariff walls have not full knowledge of our comparative position in this matter. It should be remembered that manufacturers pay heavy duties on much of their imported raw material; for instance, a large machinery-manufacturing concern in Toronto have advised me that while the tariff on their finished article would appear to give them a protection of 27½ per cent., yet their figures over a number of years show that the average rate of duty they pay on their raw materials is 25 per cent. **The protection to the manufacturer in this particular case, as in the case of very many other lines is, therefore, reduced by the amount of duty paid on the raw materials, leaving only an extremely moderate margin of actual protection.**

Honourable Chas. A. Dunning, Canadian Director of Production, is quite too good a business man not to see very clearly that even the removal of duties on agricultural implements for the farmer means that much additional burden of taxation to the population as a whole. In making his report covering the proposed removal of duty on agricultural implements, he stated he was "not concerned with questions of tariff reform, federal revenue, qustions of permanent fiscal policy, or the age-long issue between free trade and protection." Just so; if these important national considerations may be completely ignored, the whole question is extremely easy of solution. Be it remembered, though, that the two million dollars said to be raised yearly from duties on agricultural implements, if not so produced, would have to be shouldered by the people at large.

Should the Burden Be Shifted?

At this particular time in our national history, when employment for returned soldiers is going to be a matter of paramount importance, and when the largest possible revenue must be obtained in all directions to carry our gigantic war debt, the question may fairly be asked: **"Is the farming industry languishing to such an extent that in order to help it out, there must be destroyed, or even impaired, its fellow-producer, the manufacturing industry of this country?"** In fact, the weakening of the latter from our standpoint would mean partial destruction of the former. However, perhaps some figures and statements sent out by the **Grain Growers' Guide** (the official organ of the agriculturists of the West) to prospective advertisers, would help to make clear the question as to the condition of the farming population. It is stated that, based upon the figures for 1917, there will be 60,000 motor cars purchased in 1918 in the three Prairie Provinces, having an average value of $1,000 per car, making an investment of sixty million dollars, and that another ten million dollars' worth of accessories will be purchased. It is further stated that while in the United States the farmers bought forty per cent. of the cars sold in 1917, the proportion sold to farmers in Western Canada was twice this figure. It is further stated that "Western Canada, and especially the farmers of Western Canada, should, therefore, be the best prospects for your sales efforts in 1918." Another significant statement reads:

"A recent investigation, conducted by the **Grain Growers' Guide**, into nearly three hundred districts in Manitoba, Saskatchewan and Alberta, confirms emphatically the oft-asserted claim that **nowhere, and with such unanimity over such a wide area, is nature so bountiful or is the return per capita from farm life so profuse as in Western Canada.**"

"The following data is taken from this investigation:

Average size of farm.....	382 acres
Number of farms owned....	92½%
Number of farms rented....	7½%
Average acreage under crop	195 acres
Average value of farm holdings	$11,010
Average number of persons per farm home.....	5

"The wealth, as indicated above, is concretely illustrated by the official list of automobile licenses issued in Western Canada in 1917. The average for the Dominion of Canada as a whole is one auto to every fifty-seven people. The average for Western Canada (Manitoba, Saskatchewan, and Alber-

ta), is one auto to every twenty people."

Value of Cereals and Other Crops.

The figures given also emphasize the fact that in 1917 the cereal crops alone averaged in value per each farm $3.725, and that the average capital worth (land, buildings, machinery, live stock), was, as stated above, over $11,000, and that the average capital worth of the Grain Growers' Guide subscribers was $25,878. Taking their own figures of the average value of farm holdings and the average returns for the past three years, it shows that the cereals alone, without counting any other crops, have produced thirty-two per cent. per year upon the capital. There are many other extremely interesting and very satisfactory figures and statements given, all showing the great progress the agriculturists of the West are making. Now, in addition to the cereal crops mentioned in the Grain Growers' Guide circulars, we have figures issued in a bulletin by The Nor'-West Farmer, taken, it is stated, from final crop and live stock reports of the Provincial Department of Agriculture in Manitoba, Saskatchewan, and Alberta. A study of these reports gives the total value of farm-products, other than cereals, at a little larger figure than the total value of all cereals. It is fair to assume, therefore, that on the average all the expenses of farming operations would be more than met by the production of other than cereal crops, whether such products were sold or retained to add to the farmer's capital. This, then, would leave at least the profit on cereals as net returns, and I do not hesitate to say, after careful calculation, that it would be quite double the average net profits of manufacturing during the same period of three years.

The first year (1915) was disastrous, generally speaking, in manufacturing, and while the last two years have been unusually profitable in many lines, yet in others war conditions have brought paralysis. No class in Canada, however, rejoices more in the prosperity of the farmers than the manufacturers. We realize that unless producers in all classes in the country, whether engaged in farming, manufacturing, mining, fishing, lumbering, or other forms of industry, are prosperous, it is utterly impossible for the country as a whole to progress as it should. It would appear, however, from the figures given by the agriculturists themselves, as quoted above, that just now is not an opportune time for them to ask other classes of the population to assume burdens of taxation which they would like to be relieved of.

It is interesting to note that the total number of farmers in Canada holding ten acres and over is 633,748, or about equal to the total number directly engaged and employed in manufacturing.

Industrial Statistics.

Now, in order to ascertain what the National Policy has done for Canada, and is doing in the building up of our great national interests, it might be well to refresh our minds with some statistics. In the year 1915 returns show that the total number of people engaged in manufacturing on salary and wage-earners was 514,883. If we consider the munitions-making and other industries, in which women are now largely employed, we might fairly estimate the total number to-day as being about 650,000. If we multiply this number by two and one-half we should probably reach the total number directly dependent upon the manufacturing industry for their livelihood, making 1,625,000. If we add to this total the number of people who indirectly make their living on account of the total industrial dependents, we should add from twenty-five to fifty per cent., the number varying according to conditions governing different localities. This division would include farmers and truck gardeners, railway (steam and electric) workers, banking interests, civic employees, butchers, bakers, storekeepers, caterers, etc., etc. Adding only twenty-five per cent., this would give a grand total of over two million persons. The total capital employed is estimated at two and one-half billions. The total exports of manufactured products last year was $682,521,000. A comparative estimate of our main products for home and foreign consumption for the year 1917, according to the "Canadian Annual Review," is as follows:

Manufactured products	$2,000,000,000
Field crops	1,100,000,000
Dairy products and live stock	1,300,000,000
Forest products	176,000,000
Minerals	200,000,000
Fisheries	34,000,000
Eggs, fruit, etc.	40,000,000

It might be interesting to try and figure out what it would mean in the case of a great manufacturing centre like the city of Hamilton to have its manufacturing industries removed. The total population of Hamilton is 106,000, having increased from 52,000 in 1900. The total number of manufacturing plants is 340; the total capital invested $110,000,000; the total number of hands employed, including office and travelling staffs, 30,000; total wages and salaries paid per year, $25,000,000. Statistics show that upwards of fifty United States concerns have located branch industries in Hamilton, representing a capital investment of about $25,000,000. These concerns, of course, would not have located in Canada except for the incidental protection which the tariff affords. Considering the extreme industrial activity at present in a place like Hamilton, calling for large numbers of women workers, it is probable that only about two and one-half times the actual number of hands employed would be directly dependent upon industry, making a total of, say, 75,000. If we add to this even twenty-five per cent. more, as being indirectly dependent upon industry, we have a total population of over 90,000 dependents (direct and indirect) for their living upon the manufacturing industries. Any interference in any large way with the tariff which now enables these manufacturers to do business would practically wipe out the city of Hamilton. What is true of Hamilton would be measurably true of many other towns and cities.

Agricultural Implements.

We might also ask what would be involved in the question of removing the duty on agricultural implements? There are approximately 160 firms in Canada making one or more lines of agricultural implements, so that the figures given below do not include many agricultural implement manufacturers who make other lines as well, nor do they include companies subsidiary to or dependent on the agricultural implement industry. The number of agricultural impelment plants proper is sixty, total capital employed $60,000,000, total wages and salaries $7,000,000, estimated number of people directly and indirectly dependent upon the implement business 40,000 to 50,000. Now, it is quite possible that if the duty were removed on agricultural implements (and it must be remembered that the rate of duty is considerably less than manufacturers have to pay on any machines imported for use in their factories), and the duties were also removed from the raw materials entering into the manufacture of such implements, a few of the larger concerns might still live on account of their large foreign export business; yet as they purchase millions of dollars worth of supplies of all sorts from other manufacturers in Canada, all such secondary concerns would be adversely affected immediately, and there would be a general weakening and tearing down of a large portion of the industrial fabric of the country throughout. Figuring the total duty paid on agricultural implements in 1916, and taking the total value of the property of the farmers throughout Canada, it means about 3½c. for every $100, or in other words a farm valued at $10,000 would pay on the average annually $3.50. This does not seem like a staggering obligation by way of contribution to the national funds. The removal of the duty on tractors, without any consultation with the tractor manufacturers, to see what they could do o help out the situation calling for greater production, and without even making provision for the rebate of the duty on raw materials imported by the tractor manufacturers, was an unfair and unjust measure. We made such representations to the Government that they finally rebated the duty charges on raw materials, but the tractor industry, where hundreds of men were employed and others in anticipation, as well as hundreds of thousands of dollars already invested, has been paralyzed, at all events for the present.

Manufacturers' Contributions and Obligations.

Manufacturers are, however, quite tired of the abuse that is being heaped upon them from interested quarters, and while it is readily admitted that there may be many schools of economists of widely divergent views, yet it is high time that a policy of standing together in our national interests be adopted, and that we should emphasize the need of common honesty and sincerity being shown in the statements that are being circulated. The profits of manufacturers, generally speaking, have been grossly exaggerated, and while here and there abnormal figures are shown (which are subsequently largely extracted by the Business Profits Tax), yet the large profits feature also applies in the case of agriculturists. The great majority, however, of these two classes, as well as of all other classes in the country, are simply making reasonable and necessary headway. Let us look at what manufacturers have helped to accomplish in the last three and one-half years.

1. Manufacturers have contributed more largely than any other class to the furnishing of men for the colors.

2. Manufacturers in large numbers have entered into personal obligations with those of their men who may return as to giving them empoyment. As this matter of employment will be one of the most insistent questions after peace is declared, it might pertinently be asked how manufacturers can fulfil their part of the compact if the fiscal policy of the country is to be radically changed.

3. Manufacturers have been called upon to assume greater burdens of taxation than possibly any other class, and especially the farming community.

4. Manufacturers have, perhaps, more largely than any other class, contributed to all patriotic funds which have been launched.

5. No class has subscribed more liberally to all Government war loans, and it must be remembered that in very many cases those so subscribing have undertaken large obligations at their bankers to enable them to do this. Manufacturers would greatly regret being placed in such a position, either by reason of removal of the tariff or taxation measures, causing strangulation of industry that would not permit them to continue such relationship towards future Government undertakings.

6. No class has supported the farming community as much in the way of helping to supply men for the garnering of the crops, and in many cases even paying the difference in wages over and above what the farmer contributed.

7. If it had not been for the manufacturers of this country the Allies would not only have been short of munitions, but the country would have gone bankrupt on account of the balance of trade being against us. This war industrial activity has been recognized by Sir Frederick E. Smith, Attorney-General of Great Britain, in the following sentence: "She (Canada) has developed for war purposes a resource of manufacturing ability of which no one could have supposed her capable."

The time has arrived, therefore, when the Government, members of Parliament, and the people at large must be fair to the manufacturers of this country and not consider their interests as a football to be kicked about by interested politicians and others, otherwise the national interests are sure to be adversely affected. The tirade of abuse has already gone too far.

Australia's Attitude.

By way of contrast, it is interesting to note that in Australia the Prime Minister, Mr. Hughes, called all the manufacturers together in conference and outlined to them a very definite scheme calling for their help and promising the co-operation of the Government for the furtherance of industry, and especially to try and secure export business; in other words, the Government of Australia is so seized with the necessity of maintaining and enlarging her industrial life that the Government commits itself to plans of co-operation that are most commendatory. In a remarkable address at Melbourne, Mr. Hughes closes with these eloquent and significant words:

"I do not hesitate to say that with proper organization we can increase the output of the primary and secondary industries very substantially. We can rapidly increase our export trade. We can place industry on a firm basis by an organization which will aid the individual producer to increase his output, find him markets for his product, and ensure transport at reasonable rates thereto. And in this way we shall reduce the burden imposed upon us by this great war, rapidly develop our resources, find regular employment for our people at high wages, and attract large numbers of the right kind of immigrants. The war has brought to us, as to all the nations of the earth, many and grave responsibilities. We must be prepared to shoulder them. We have not only to produce more wealth to pay for the war, and to develop this our glorious heritage, but we have to hold it for the Empire and for our descendants. But there is something greater. That far-flung domain known as the British Empire produces every mineral known to man and every variety of the animal and vegetable kingdoms. Its wealth is uncountable, its resources illimitable. Organized it can control the world; unorganized it must fall a victim to a more efficient nation, and its wealth pass through divers channels to alien lands. A deep and lasting obligation rests upon all the dominions to play well their part in this great plan of national organization, without which we are undone. Inexorable circumstances, patriotism, and common prudence alike compel us to adopt such a policy as will at once develop our re-

sources, increase our production, and ensure our national safety."

Great Britain and Industry.

Great Britain realizes that in order to hold her own as a nation and maintain her prosperity, she has not only to do everything possible to get hold of trade again, which she has temporarily lost during the war, but she must also put herself in a position to regain that which other nations, particularly Germany, have taken away from her during recent years, largely on account of governmental direction and help. All sorts of guilds and associations are being formed, acting under the supervision and co-operation of the Government in Great Britain, to secure the fullest measure of trade for British industries. Sir Albert Stanley, M.P., President of the Board of Trade, said recently:

"He could not help thinking, perhaps wrongly, that past Governments of Great Britain really failed to take into account the fundamental fact that this was a commercial era, and that the efficient conduct of the great industries of the country was absolutely vital to its welfare. Unless industries could be carried on with an equal degree of efficiency, unless they could produce their manufactured products at prices that would compare favorably with those of their great foreign competitors, what chance had the country of succeeding in establishing its place with the other nations of the world? He thought that the governments from now on would take an infinitely greater interest in industry, and would make it their business to see that it was carried on efficiently, and that there would be secured to the country the establishment of industrial enterprises which would make it absolutely secure against dependence on any foreign country for any essential commodity."

Canada Being Poisoned

In Canada, however, not only have we received no direct help and lead from the Government in connection with planning for our industris after the war in the nation's interests, but a considerable section of our population is keeping the country in a foment of agitation which would tend to destroy rather than to build up. **There is only one way to pay off our accumulated war debts, and that is by producing in field, forest, mine and factory all that we possibly can, and selling these products at as high a margin over the cost of production as we are able to secure.**

As far as export trade is concerned, manufacturers in Canada may be forced in the national interests to sell their wares at a merely nominal margin of profit so as to help preserve the balance of trade and at the same time give employment to the largest possible number of people. The crux of the situation calling forth denunciation of industry, we believe to be just here. Interested parties have poisoned the minds of agriculturists and other classes in this country and have led them to believe that the manufacturers not only received directly an enormous advantage from the tariff which they were not entitled to, and in consequence were making profits which were out of all proportion to the risks involved, but were also actuated by the most selfish motives. It is, therefore, opportune to say fairly, honestly, and emphatically that the average net return from the investment of capital in industry is not more than it should be to encourage men to take the risks incident thereto. Further, while here and there large profits have been made by manufacturers, as is also the case of agriculturists and other classes, yet the history of the past generation shows thousands of abandoned industrial enterprises in which men have lost their all, just as there have been abandoned farms that were not made to pay.

In the United States, according to recent returns made to the Federal Trade Commission, out of 250,000 trading and manufacturing concerns over 100,000 earn no net income whatever; in addition 90,000 of them make less than $5,000 per year, some of whom have very large capital invested. It is the same thing in Canada: the few succeed, whom we all hear about from the housetops, and the many either just get along or languish and die.

Agriculture Needs Home Markets.

The Old-world countries are already taking steps to make themselves more self-contained and self-supporting in the matter of food stuffs. It may not be long, therefore, before the agriculturists of this country realize that they must depend more largely than ever before upon the home markets. To this end, manufacturing industries, if encouraged, should be established all through the West as soon as the population is able to take care of them and raw materials may be secured. No nation can become great that is concerned solely with agriculture. **Every important country in the world, except Great Britain, has found it necessary to adopt a policy which gives protection to its home industries, and many believe that she will be forced to fall into line after he war is over.. Under free trade, agriculture has not prospered.** A writer in **The Athenaeum**, for February, 1918, in a remarkable article, admits that he was "brought up to revere free trade," but believes the time has arrived for fresh consideration and revision. He says: "The politicians must now see that it is life and death for England, and for English men and women; it is no game for political struggles, no academic arena for non-participant, detached philosophers."

This section of my address would not be complete without the statement that the challenge of the grain growers that the challenge of the grain growers, through their official paper, to the manufacturers to declare themselves on the tariff, and to which I was compelled to respond, led me to study the question from their standpoint, as well as ours. If the figures given do not tell all the story, and the agriculturists of the West are not receiving proper consideration, then we should be the first to co-operate with them in trying to remedy their difficulties.

There is said to be a condition existing among the truck farmers and gardeners of the East whereby they receive only an average of thirty-five cents as their portion of every dollar's worth of products sold. If this is correct, it is a wrong that should be righted, and for this purpose the facilities of our Association would be placed at the disposal of those interested.

Concluding Words.

In concluding my address, I desire to thank my fellow officers, the members of the Executive Committee and of the Council, as well as the merbership throughout, for the remarkable sympathy, support and confidence so often expressed during my term of office. This association and experience have been to me a source of happiness and joy that will cheer me throughout the rest of my life. I am sure that I can bespeak the same consideration for my successor.

I should also like to give utterance to my warm feelings of esteem towards our loyal, hard-working, and efficient staff at Head Office and at all the Branches. We have a splendid organization extending from sea to sea, and that is being used to further the interests of trade and commerce throughout our glorious Dominion.

It is a time to build up and not tear down—a time for co-operation and not opposition—a time to stand to our tasks and not be found shirking— a time to act unselfishly and not be moved by greed—a time for national unity and not discord—a time to fight our battles bravely and not lose faith in God that right, not might, will soon rule all the world.—Advt.

POULTRY.

THE CHICK THAT LEAVES A PROFIT IS THE ONE THAT GETS NO CHECK IN GROWTH

Chickens are the quickest meat crop that can be produced. Their production requires no large cash outlay.

Success with poultry depends largely upon how well the chicks are raised. Unless the chicks make a rapid growth during the first few weeks they will not return a profit. Be sure that the chicks come from good stock, provide plenty of house room, and keep them growing all the time. Feed all that they will clean up, but do not waste a bit of feed. Utilize material, whenever possible, but do not feed any musty, moldy, or decayed feed.

The big waste in poultry comes through losses after the chicks are hatched. It is a crime against the nation's meat supply to let a chick die that has eaten feed and used someone's time and energy. Save your chicks by careful feeding, by keeping them in a warm, clean house or brooder, and by protecting them from their enemies.

To be successful with baby chicks you must furnish them:

1. A warm place to sleep—mother hen or a good brooder.
2. Fresh air to breaths—good ventilation.
3. A clean feeding floor—keep floor littered with clean chaff or shavings.
4. Good feed to eat—avoid musty or moldy feed.
5. Feed in small amounts, given frequently.

You must also protect them from:

1. Lice. If hen-hatched, grease the tops of the chicks' heads with vaseline and dust the mother hen.
2. Mites. Spray the house with coal tar disnifectant.
3. Rats. Wage war on rats, put in cement floors and foundation if practical, clean up rubbish piles and other harboring places.
4. Cats. Use covered yards in town while chicks are small.
5. Dirty quarters. Clean houses frequently.
6. Foul yards. Spade frequently or move to new ground.

Feeds for the Chicks

The little chick must not be fed any hard feed until 48 hours after hatching. (However, the mother hen, if one is used, should be fed. Give free access to skimmilk (fresh or soured) or buttermilk as soon as they leave the nest or incubator. When the chicks are 48 hours old feed them in chaff, chopped hay or straw, or shavings.

The best chick feed is pin-head oats, broken rice, and such feeds, if you can secure them, or use a good bran of commercial chick feed. (Feed morning, noon, and night.)

Bread (stale) mixed with sour milk and hard boiled eggs, makes a good first feeding ration, but a change of fine grit must also be given them. As the chicks get a week or two older the boiled eggs may be omitted and a little meat scrap or fish scrap added or the eggs or meat may be omitted entirely if necessary. (Feed midforenoon and mid-afterr oon.)

Dry Mash

If chicks have a good range, dry mash may be left before them all of the time. If confined to a house or small yard then allow them to have dry mash for only an hour or so toward night.

Mixture No. 1:

Rolled oats	1 lb.
Bran	1 lb.
Middlings	1 lb.
Gluten feed	1 lb.

Mixture No. 2:

Gluten feed	1 lb.
Hominy feed	1 lb.
Rolled oats	1 lb.
Barley middlings	½ lb.

For the first three weeks use a mash such as No. 1 or No. 2 or else use a good grade of commercial chick mash.

Animal Feed.

We have raised good chicks on fine cracked corn, clover, and buttermilk, and also on corn, clover, and meat or fish scraps, but more variety in the ration is desirable. The village poultry keeper may be able to furnish his chicks enough animal feed by frequently spading the yard and letting the chicks eat the worms, and by carefully feeding any meat or bones (broken in small pieces) from the table.

It is very important that animal feed form a part of the ration. When chicks have free range they can usually find bugs and insects so that they will make a fair growth, but buttermilk or freshly soured skimmilk may be fed to advantage even when chicks are on free range. Milk is best fed in earthenware fountains. Yarded chicks are frequently stunted because their ration lacks animal feed. If you cannot obtain fresh buttermilk or skimmilk and have more than a dozen chicks you will find that it will pay to secure condensed or dried milk meat scrap, or fish scrap. The buttermilk or fish scrap may be added to the meat dry mash so as to form about 8 to 10 per cent. of the ration. Most of the chick mashes on the market have one of these forms of animal feed.

Green Feed.

The best chicks are grown when green stuff is the most tender. Encourage the chicks to eat large amounts of green stuff by supplying it in abundance. Keep the grass cut short or pastured down close so that it will be tender. If chicks are yarded, carry them all the weeds, waste lettuce leaves, lawn clippings, cut green clover, and other grasses that you have.

Mineral Feeds.

Chicks make very rapid growth and must have plenty of mineral matter in order to make that growth economically. Give free access to fine or chick size lime rock grit, or to finely crushed oyster shells (if you have old hens screen out the fine part for the chicks and give the coarse to the hens.) Chick size dry bone is a very valuable addition when chicks are yarded. Give free access to charcoal at all times.

If chicks have free access to freshly soured skim-milk or buttermilk they do not need water for the first four to six weeks. After that, fresh, clean water should be before the chicks at lll times.

Use all the kitchen and table waste possible. Chicks will relish many things that formerly went into the gar-

CONSTIPATION

CURED BY THE USE OF

MILBURN'S

LAXA-LIVER PILLS.

Constipation is one of the most prevalent troubles the human race is subject to, and is the greatest cause of many of our ailments. If the bowels cease to work properly, all the other organs become deranged.

Milburn's Laxa-Liver Pills work on the bowels gently and naturally. and will cure the worst cases of constipation.

Mrs. Winslow McKay, Jordan Branch, N.S., writes: "I have been sick for a number of years with sick headache and constipation. I tried all kinds of doctor's medicine, but none did me any good until I tried Milburn's Laxa-Liver Pills, and after using four vials I am completely cured. I would heartily recommend them to all sufferers from that disease. I keep them on hand all the time."

Milburn's Laxa-Liver Pills are 25c. a vial. Sold by all druggists and dealers or mailed direct on receipt of price by The T. Milburn Co., Limited, Toronto, Ont.

bage can. Even the experimental war bread will not be entirely wasted if it is fed to a bunch of husky chicks!

J. G. HALPIN.

MARKETING FARM EGGS

It is really an antiquated farmer with ancient ideas, indeed, who fails to appreciate the fact that appearance cuts a mighty big figure nowadays in sales and prices of his products, and where is appearance any more noticeable than in the market egg basket? The question of marketing eggs should be carefully studied by the farmer or farmer's wife, who must needs finally conclude the marketing only absolutely fresh, clean eggs brings most attractive, profitable returns. If your eggs are always of such character they will be known and sought as such, first and at special prices, presumably. It does not require a bit more time to grade and sort eggs for the market immediately after they are gathered, and is really more convenient, since the numbers are not so large to handle.

It must be admitted that the gathering of the eggs has previously been looked upon mainly as a chore of more or less importance, which could be done at any time, generally by the children, and it is a custom still prevalent with some to gather only once weekly, just before needed for market, or upon the huckster's coming, and as a result all kinds of eggs, good and bad, go on the market. Because everyone is insisting upon obtaining the very best of any and every thing for the high prices they are compelled to pay, is just the reason why your returns will fail to be what they should, if you allow dirty eggs, eggs from stolen nests, or that have been under setting hens, or that have been on hand for a long time, or that have been on hand for a long time, to be mixed with your fresh, attractive eggs.

Very small eggs, thin-shelled or dirty eggs, or eggs from stolen nests are best used by the farmer's family. They can thus be utilized in a much fresher condition, at a much less loss. Dirty-shelled eggs are very objectionable, really repulsive; although the egg itself may be large and fresh, it will undoubtedly command lower market prices, being rated as "seconds." And it is really of very little use to wash dirty eggs, as fresh eggs, gathered from clean nests, have a bloom that any amount of washing fails to produce or bring back. Instead of washing away this much-desired lustre, trying to get them marketably clean, look more to the nests, cleaning and freshening them oftener, and gathering the eggs more frequently. Eggs should be gathered once a day, at least, in all seasons; preferably twice during the Summer, when broody or setting hens are so likely to cover them all day long. If you must resort to washing, never use soap, but soak in clean cool water, then remove stains by gently rubbing with clean cloths and perfectly drying them, as packing while they are damp causes molds of different forms. Packing cracked eggs is sure to be a loss, probably before they even reach the home market. A crack ever so small in an egg shell will admit germs which rapidly lessen its keeping qualities. It is said over 13,000,000 dozens of eggs are spoiled annually just by these tiny cracks, which can be avoided by just a bit more care in collecting them. Eggs should always be kept in cool, dry rooms, free from dust and offensive odors.

Now is the time every farmer or farm woman should exercise the greatest care in marketing eggs, not alone for the excellent returns, but because an egg is acknowledged by the best of authorities to be the most valuable food for the human family; hence they should be of first-class quality in these days when the world is facing food famine. Everyone who prepares the market egg basket, egg crates or other container, is an unspectacular patriot, and camouflages along this line are most undesirable.

TAKES 7 POUNDS FEED TO PRODUCE A DOZEN EGGS

With bred-to-lay stock under good management it requires about four and one half pounds of feed to produce one pound of eggs or about seven pounds of feed to produce one dozen eggs. Under conditions where the fowls are supplied with practically every article of food laying hens consume, on the average, about ninety pounds of grain, twenty pounds of green food, two pounds of oyster shells, one pound of grit, and one-tenth pound of charcoal. On the average farm the amount of grain supplied would not amount to ninety pounds because of the considerable quantities of food material secured by the hens while ranging from spring to fall. The farmer should learn to feed well during the winter months because winter egg production is most profitable; on feed cost alone five dozen eggs laid between November 1st and March 1st, would pay for a hen's keep for one year. If the average hen produced an average of twelve eggs each month for the year she would be an efficient hen, making a fair profit over present cost of feed. In proportion to pre-war prices feed prices have advanced more than have egg prices so that the hen must lay about twenty more eggs per year than in 1914. The number of eggs laid above that required to pay for a hen's keep for one year is of greater value now than in 1914 so that the heavy laying hen is more profitable than ever, particularly if the extra eggs are laid during the winter months. Incidentally the poor laying hen was never so expensive to keep. The object lesson to be deduced is that production must be carried on as efficiently as possible, and this means that birds over two years old should very rarely be kept, the majority of the laying stock should be pullets, the layers should be selected with the greatest care, and the method of feeding, breeding and general management should be such as to induce maximum egg production.—M. A. JULL, Macdonald College.

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LOSSES AMONG YOUNG TURKEYS

The principal causes of the high mortality among young poults, as given by Government poultry specialties, are exposure to dampness and cold, improper feeding, close confinement, lice, predatory animals, and inherent weakness due to carelessness in selection of parent stock.

If the coop is built to keep out rain and placed on well-drained ground, the danger from dampness is lessened. During rainy weather the mother hen should be confined to the coop and the young ones allowed to run in and out at will. At such times the coop should be moved to fresh ground each day. If the weather is warm and dry no shelter is required. They will do better in the open. After the poults are three or four days old they may be given free range. Any time cold, damp weather sets in young poults need to be kept in dry quarters.

Great care should be taken in feeding the young poults whenever they are confined. Only when natural feed outside the coop is scarce should they be fed at all. They should be induced to take plenty of exercise to avoid indigestion. Common chick feed, corn bread crumbs, hulled oats and hard boiled eggs, chopped fine, are found to be good in small quantities fed often. Chopped onio ntops, lettuce leaves and alfalfa make excellent green feed to use when green feed cannot be picked up outside. Coarse sand is a good grit.

Lice cause high losses among poults. Those badly infested become weaker and weaker until they die. By dusting the hen when she is set, with some good lice powder, it is a very easy matter to prevent lice from getting a foothold among the poults. A further precaution is to carefully examine the poults every few days. If lice are found about the head, rub on some lard. This kills the lice by closing their breathing pores. If body lice are found the poults should be dusted under the wings and below the vent until the pests are exterminated.

TURKEY POULTS ARE PAYING STOCK

A turkey rearer has the following to say in regard to the success of her work:

"I now have 69 young poults which are doing fine, and have 67 eggs under incubation. I raise my poults chiefly on cottage cheese, corn bread and all the sour milk they will drink. They have farm range, but never go beyond sight. I have a roomy roosting house for them which has a front of wire netting to keep anything from molesting them. On very cool nights the doors are closed.

I keep the house very clean and dry, keeping clean chaff on the floor and when the morning is very cool and damp I do not turn them out but scatter feed in the chaff and they enjoy scratching for it. I think this keeps them contented until it is dry enough to let them out. I never let my poults get wet.

I feed regularly and at the same time every day, five times daily when the poults are less than four weeks' old, four times daily for another two weeks, and then feed three times daily. As they get older, will feed only twice per day. I never feed poults all they will eat up clean, but keep them a little hungry all the time. To prevent bowel trouble and indigestion, I dissolve a half teaspoonful of copperas in two quarts milk or water, and give this twice each week until they are full grown.

Turkeys require quite a litten attention when young, but there is nothing that will pay the farmer's wife or daughter any better for their work.

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FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B., solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's or-ganizations.

HELPING WIN THE WAR

(By May Isabel Fisk)

Oh, no, dear—I can't stop. Don't ask me. I only hopped in for one second as I was passing, to see how you were. I'm nearly dead myself—absolutely worn out; not in spots, you know, but just all over. I stood for two mortal hours yesterday while my new uniform was being fitted—it's the sweetest thing—but it's all for the good of the cause, so I mustn't grumble. I don't know, tho, what Billy's going to say about the trousers: I haven't mentioned that part yet. But it's all frightfully becoming. Mme. Aimee is making a specialty of what she calls "land costumes"—horribly expensive, but then, we must all sacrifice ourselves these days.

Oh, I don't know yet—some kind of digging and then planting things—seeds I suppose. And then pruning them and grafting them. Just what do you do tot make vegetables grow—it's not difficult, I've heard. I shan't do cabbages or turnips or anything that's really not nice. I mean I shall do only the better class of vegetables. I might do something else; I can't tell yet. But, of course, the first thing is to see my costume is right.

I'm determined to help win the war, I told Billy I was going to, he said, "Yes, it's women like you who do 'help win the war!' " I feel sure he meant something horrid. Billy han't always the sweetest of tempers, but whatever I have to suffer—well, you know me well enough, Mabel, to know I'm not the one tot talk about it. I keep things to myself, tho sometimes I nearly strangle, doing it. And untidy! You ought to see Billy's room after he's been dressing—everything all over the place—and always asking me where things are. As I've told him a hundred times, "When I know what I've done with a thing I can always find it, no matter where I've put it."

And as tho we didn't have enough unpleasant conditions to struggle with nowodays, Billy does nothing but talk economy till I'm sick to death of the word—it's the most hateful in the whole language—never means anything agreeable or having a good time—not that I want to enjoy myself, now, of course. I've given all that up forever. I only want to do my duty by my country; but naturally, I want to do it in my own way.

These are perfectly spiffing chocolates. Where did you get them? No, my dear mabel, no more frivolity for me—I'm a changed being since this war. But about Billy. As you know I never talk about my private affairs, but he is being so exasperating just now; you have no idea what I go through. However, I just told him bang out the other night, husbands were no luxury nowadays with all these good-looking soldiers about, and any man could be easily replaced!

He shrieks nothing but, "Save! Save!" from morning till night—and then he doesn't like it when I try it on him. The other day my grocer sold me some splendid tablets—at least, he said they were—called "beefettes," each one equal to a whole roast beef squashed up. Think what you save in the cooking and no mess and no chew to it—and only fiv ecents each. Well, if you could have seen Billy's face when Mary brought in the plattter with just those two tablets with a bit parsley around them. I wouldn't like to tell you what he said—but I shouldn't call it it patriotic!

I've always found this saving business so expensive. Not to speak of the agony of mind—every nerve in my body is worn to a bone—and not a "Thank you" from any one. Of course I started in the kitchen—I cut everything in half except the work. I thought if I gave them twice as much to do, they would be so busy they might not notice how everything else was reduced. I always think things out sort of logically.

That grocer is a perfect genius. He sold me some wonderful stuff to mix with the kitchen tea to make it go further—"dustine," he calls it. A sort of prepared sawdust, I think it is—but most nutritious and helps tremendously. And only a dollar and a half a pound. Such a saving.

I really must be getting on; I haven't a moment to spare. And I want to buy a hat. I want you to go with me; I hate to go alone.

I've got to meet Mrs. St. John later. She's English, you know. You pronounce her name like Injun with an S in front of it. She knows all about how they are running the war in England and she is going to show us how—we've a lot of serious things to discuss. Do you know her? I hardly thought you did; she's awfully exclusive—particular, you know, whom she meets. Now why do you take it like that? I didn't mean anything of the kind; you're awfully touchy. She thinks the world of me.

I want to get up some kind of a fund for something to send the soldiers. Nothing wolly—I want it to be different—so I thought of umbrellas, as I never heard of anyone suggesting them before. But Mrs. St. John wouldn't hear of it—said they never used them. I don't like to think she's just a tiny bit jealous of me. For you know there certainly must be times when it's too wet for them to shoot.

Her sister very nearly married an earl or duke or something, but she's not a bit stuck up over it—Mrs. St. John, I mean. Well, I don't know why she actually didn't, but she certainly very nearly did, because there was some kind of a lawsuit over it. She got quite a lot of money out of it—the sister—not that she wanted it, Mrs. St. John said. Ye—es, an actress, I believe; the stage is thought to be quite respectable in England, Mrs. St. John says. It seems funny, but she says it's so. She' a perfest dear—not much figure—you-never-know-whether-she's-coming-or-going kind. And plenty of hands and feet, but awfully "good form" the other way.

So I've simply racked my brain to think of some new movement that would make the other women wild for not thinking of it first. I'm going to be patriotic if it kills me! And it's got to be something startling and self-sacrificing. You never get your picture in the papers nowadays unless you self-sacrifice a lot.

Now I've noticel this is what you might call a war of substitutes—we are going to eat all kinds of things in place of something else and everybody gives up what he or she was doing to let somebody else go somewhere else. This has taken a lot of thinking out, I can tell you.

Well, now I want to get up a scheme for women like ourselves to take the place of scrub-women who do office floors or something particularly nasty and unpleasant like that, and then release them to learn to be Red Cross Nurses. Isn't it a great idea? Everybody will be talking about it. I've told Mary the days I didn't feel like going I would pay her and she could take my place. Not that I want to get out of it, but that would really be something more of that substituting business—more patriotic, in fact. I just mentioned this to Mrs. St. John—not about Mary, I mean—and she said some one had tried to do something of the kind in England, but the soldiers didn't like it; they said the women had scratchy hands and smelled of beer. But of course they don't do that here—be beery. I think they call them charladies over there.

Of course I'd rather be a nurse myself than anything else. I just adore that uniform and the thing they wear on the head; but then there's Billy again. The firts time I spoke of it he wouldn't hear of it, and when I said I was willing to do anything to help, he just grunted and went on reading the paper. And if you'll believe me, the other day I hinted, mind you, didn't ask, only hinted, something about a new fur coat—I didn't even say it out loud— kind of whispered it—and all Billy said was he'd subscribed all he could to some kind of war something or other and not a penny more for "fallals"—that was the word "fallals"—fancy a fur coat being called such a thing!

And you know just as well as I do, all the new coats are cut differently this year. But do you think Billy cares one bit about that? Well, he doesn't! I can't for the life of me see how he shows his patriotism by letting me go around in a last year's coat. Practically freezing you might say—almost naked. I'm just as much a part of the country as anybody else. Well, never mind—thre are some things I don't talw about. But my ideas are entirely different, tho it is pretty difficult trying to do your duty by your husband and the country at the same time. However, I don't suppose any one ever did their duty because they liked it—this doesn't meany anything about Billy you understand.

Of course, if I did go as a nurse to France I wouldn't do anything unpleasant—not go right into the battles or where there were any bullets, but there must be plenty of nurses needed just to read to those poor darlings when they are tired out or smooth their pillows or something really womanly like that and not disagreeable.

Which reminds, I suppose I've got to spend another afternoon racing around the shops trying to match stockings for my "land" boots—I'm having some brown ones made to order. Not too hideous, you know—rather tricky in fact—I shall dig something, somewhere—I haven't decided. I might go to France after all. Billy might change his mind about letting me go.

Husbands are so different after you marry them! And marriage is so different from what I thought it was going to be. All the things Billy and I were going to do, and we haven't. All the best books we were going to read at night over a roaring fire; all the discussions and talks we were going to have over the big questions of the day! At night he falls asleep over his newspaper and the big questions we discuss are why the bills are so large and if we can't get along with less and economize—that detestable word!

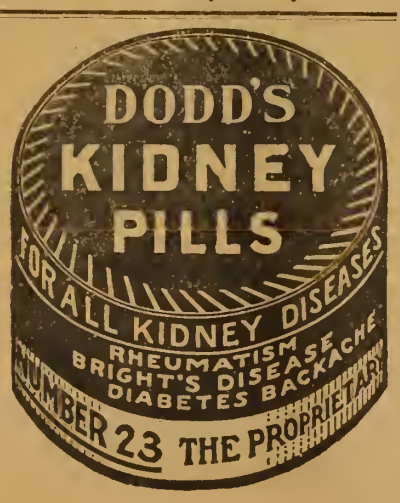
Of course, about going to France as a nurse, there are really several very serious things against it—I don't know what I should do about my hair—I'm a fright if I don't have it waved at least once a week. And how am I going to cheer up sick soldiers if I'm like that? There might not be a thoroughly reliable hairdresser anywhere near the hospital or thing I'd have to go to—pahtisularly if it was anywhere near where they were doing the battles. Dear me, there are so many things to think of when you are as anxious to help as I am. Then I'm looking such a wreck with all this work. I've started a course of face treatments and I must go three times a week; awfully expensive—five dollars a smack, as you might say—I don't want to lose that.

Really, I must go. Put on your things and come with me while I buy a hat. My dear Mabel, surely, you are not getting stouter—perhaps it's only that dress—it gives you a sort of dump. I mean it rather takes away from your slenderness, don't you think? So few women can wear those loose, baggy things successfully. Not that I have ever seen any one look better in those shapeless things than you do. Do you mind my asking how much you paid for it? Not really? You are a wonder! I'm not a bit of use trying to pick up cheap things like that; they don't suit me at all.

Are you ready at last? Here don't forget your bag. I'll take another chocolate before we go. Let's walk.

We'll go in here—those hats in the window aren't half bad.

Oh, just a hat—sort of war hat—one



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H'm, rather small. Don't you think so, Mabel? You don't? Well, I do. Besides, I don't call mauve, cheerful. Oh, no, I don't want a large hat. Oh, no, those medium sized things have no look at all about them. I don't want anything extreme, mind you—in these days any thing of the sort is inexcusably vulgar—still, not to be one thing or the other, is really nothing at all, is it? Just plain dowdy.

Of course, actually, I don't care at all how I look nowadays; then again, I always think one should do one's best and when you are buying a hat—and only one hat—why, you want it to look like—well, a hat!

That gray's rather nice, isn't it? What do you think, Mabel? Don't you? I do. Wouldn't look bad with my dark blue—still—I don't know—I think it's a trifle old for me. What do you say? Oh, you don't? Well—really—I don't suppose you did "mean anything"—you seldom do. But I know what you said. Never mind.

What about this brown one with the grapes and roses? Nice useful looking hat. But come to think of it, I knew some one once—with grapes, just like this—and she got caught out in the rain, and the grapes all melted and ran down her face in rivers; got all stuck in her hair and she had to have alarge bunch cut off. No, no—not the grapes—bunch of hair.

Besides, they say we shouldn't make any show of food about now—as tho there was much of it—it isn't patriotic—so I don't think I oguht to. I wish I hadn't such a conscience—I'm always doing right and simply hating it. Don't misunderstand me—it isn't the "right" I hate, but the doing it. Now I don't hate Billy's mother, but I hate having her stop wifh us—except when she sits up with the children when they have funny things and I don't know what is the matter with them.

Yes, that is rather nice—but what about that white facing. It will soil so quickly. Oh, you have it without? Yes.—u'mm-m-m! But it is so gloomy looking with that dark underneath—I shouldn't care for it. Do you like it, Mabel? You do? Well, of course my dear, I want you to give your opinion quite frankly, but I didn't think you were going to disagree with everything I ask you.

I saw such a lovely hat the other day. I don't know where it was—but exactly what I want—perhaps you have something like it. It was one of those—well, sort of nondescript shapes with no beginning or end, as you might say, yet perfectly delightful. It had an ornament on one side—or the back, I forget which. No, come to think of it, I believe it was in the front. Anyway it was just in the right spot—one of those lumpy, fascinating things. The material was some shiny stuff. Have you anything like it? You might take a look.

Oh, dear no; that's nothing like it. No, that's worse! Good gracious! And I've just described it! Surely you could tell—I don't believe you listened.

Really Mabel this is a very stupid girl—she hasn't the vaguest idea what I want. And she has such and indifferent look about her.

Now that little black hat over there in the case isn't bad—the one with the cherries—but there, that's food again. No if you put something else on it probably I shouldn't like it. Haven't you got something with those waterproof flowers on it? No I haven't seen them myself but I've heard about them; quite a common thing, I believe. You must have seen them Mabel, haven't you? You haven't? Well, I can't remember where I heard about them, but I do know all the best places keep them.

Oh, no, I don't like that. Mabel, you're looking so tired—I'm sure you

don't go t obed early enough. If you had to rush from morning till night the way I do you would have some excuse——

Heavens, no! Nota hat with all thosethings on it—how would that look in the rain? Yes, I did say I wanted it for afternoon and evening as well, but I want something perfectly suitable for all occasions; you must have something like that if you look hard enough. I thought I explained so carefully what I wanted when I first came in.

Why, how do you do, Mrs. Maitland. Fancy meeting you here. Oh, I don't know, I always thought you made your own hats, somehow. I don't mean they don't look nice, but they have that simple, quiet, home-made touch you can never get in a shop. I think it's so clever of you—and in these times we all want to save. I just dashed in here for about two minutes to pick up something—anything, in fact—and then I have to rush off on my war work. I'm going to meet Mrs. St. John—she's English you know—her sister nearl ymarried an earl or a lord or something.

Oh, yes, thanks, I'm quite well. Billy has a slight snuffle, so of course he thinks he's ill. Men make such a fuss over nothing. He will be quite able to go out by tomorrow—if he wants to. Now when I get a real good, bad cold I'm in bed for a fortnight over it; nobody could budge me. Doctor every day and the whole place upside down; there's no pretending with me.

Oh, yes, I'm quite free as yet. I'm going to do all kinds of war work; I'm willing to do anything—doesn't matter as long as it helps. Why, yes—I'd love to help you. At a canteen? It sounds frightfully exciting; I should love it. I'm crazy over uniforms and I should adore waiting on the men. Oh—oh—did you say help in the kitchen—wash dishes? Oh, yes—yes—certainly—quite right— perfectly true—some one has to do it, and of course I don't care what I do, but—but—now I come to think of it—I shouldn't be able to.

To tell the truth Billy is frightfully pulled down over thi sattack. I didn't want to alarm you by letting you know how badly off he is; it's turned out to bronchitis than a cold. In fact, I'm sure that he will have to go away for a change. When did you say you

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would want tme? How unfortunate! Just the very day we'll be leaving—we were talking about it only this morning. Indeed. I'm just here to buy a simple hat to go away in. Now some other time; you won't forget me, will you? So nice to have seen you. Good-by.

Now what do you think of that for a thoroughly detestable woman. Fancy asking me to help in the kitchen.

Oh, no. I don't like that. I really feel now as tho I shouldn't like anything this morning; that woman upset me entirely. What do you say, Mabel, to having lunch first and then coming back to finish this afternoon? Very well. let's. I'm hungry.

Thanks very much, but I don't care for any of these things you've shown me. Perhaps you could be looking out some others I might like better for when we come back. Good morning.

There. I'll never go in that place again. They don't know how to treat you.

Do you know, I don't think I'll buy a hat after all, but I'll get one of those white fox fur things for my neck and when it rains I'll take a taxi. . And it would be so useful if I go to France!

St. Andrew's College Toronto

A CANADIAN SCHOOL

FOR BOYS

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Large Playing Fields Excellent Situation
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VOL-PEEK

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MOISE DEROSCE.
Hotel Keeper, St. Phillippe. Que.

CONSERVING ESSENTIAL FOODS

Ever since the world began it has been the housekeeper's bit to conserve the family's resources, so making the most of our country's supplies in order to win this war is a task for which she is peculiarly fitted. It may be troublesome at times to change one's methods of cooking, but so long as the war endures there is no doubt that the housekeeper must always be able to substitute one food for another when a shortage in any commodity arises.

For instance, last winter when the sugar supply ran low there were many weeks when it was impossible to purchase enough to even sweeten the breakfast coffee. So we used condensed milk for the morning cup and made our occasional cake or pudding with corn syrup.

When our government asked us to save beef, mutton and pork for the soldiers, meatless and meat extension dishes became matters of public discussion and appeared on the family table with great regularity.

Then animal fat became scarce and even the housekeeper who had been brought up on lard turned to the use of vegetable oils and their compounds, the hydrogenated oils, without complaint.

We learned to combine corn meal and rye with wheat in our bread-making in order to save the sorely needed wheat for the Allies. But now wheat is becoming increasingly scarce so that before the next harvest, when we can secure a new supply, it may become necessary to plan a wholly wheatless diet. Rye, too, is getting harder to buy, and substitute flours with which the Canadian housekeeper has had little or no experience will be the main source of supply.

These we have in great variety. So great indeed that few people realize the bread-making materials that as yet we have scarcely drawn upon. Flours made from barley, corn, oats, rice, potatoes and peanuts are now being produced, and it is quite possible to make excellent breads, pastry and cakes from them either in combination with wheat for yeast breads or alone in quick breads. Used in either way these flours effect a large saving of wheat. A considerable saving can also be made by using barley, corn meal, corn starch or mixed flours for thickening soups and gravies and as dusting flour. Keep a jar or box filled with one of these substitutes near the stove and you will find it wholly unnecessary to use bread flour for this purpose.

There are many nations in the world who get along very well without wheat, and so can we. It is only the knowing how.

Sugar is not so scarce as it was during the winter, but its consumption must be carefully guarded so that there will be sufficient in the country for canning and preserving, both for the home canner and the factories. Our government assures us that there will be plenty of sugar for canning if the housekeeper continues to use corn syrup, molasses, maple syrup or honey in so far as possible for daily consumption. As food conservation is the housekeeper's most important war service, saving sugar for the canning season is a real duty. A great saving in sugar can also be made by canning our fruits instead of preserving them as this takes much less sugar, and waste of sugar from spoilage of jellies can be avoided if the simple alcohol test recommended by the U. S. Department of Agriculture is used to determine how much sugar is necessary with each kind of fruit juice. To do this, place a spoonful of juice in a glass, add to it a spoonful of 95 per cent. grain alcohol, and mix by shaking the glass gently. Pour slowly from the glass, noting how the pectin—the substance in fruit juices which makes them jelly—is precipitated. If the pectin is precipitated as one lump, a cup of sugar may be used for each cup of juice; if in several lumps the proportion of sugar must be reduced to approximately three-fourths the amount of the juice. If the pectin is not in lumps but is merely precipitated, the sugar should be one-half or less of the amount of the juice. If the juice shows no precipitation under this test, it is unsuitable for jelly making and must be combined with apples or other juices rich in pectin.

Before making the test, it would be well to taste the juice, as fruits not as acid as good tart apples probably will not make good jelly unless mixed with other fruits which are acid.

This is a simple precaution, but it will save large quantities of sugar as wel las the disappointment of putting up jellies which won't jelly.

The third war food which we were urged to save was meat. Although meat is not so scarce now as it was during the winter, it is still high in price owing to the grain shortage, and while it is not necessary for us to do without meat because of our patriotism, it is necessary in many families to cut down its consumption because of its prohibitive cost.

A well-selected group of meat economy and meat substitute dishes is well to have at hand.

Fat is the fourth food that war has made scarce, and while the necessity of conserving it is not so imperative as a few months ago, the saving of fat is essential.

Fat has a real relation to the war program, first, as an important energy food for the fighters, and second, in the manufacture of munitions.

As a nation our consumption of fat has been greatly in excess of our needs and as a nation our waste of fat has been enormous. So by using less in the diet and by using more carefully household supplies, our measure of service in food conservation can be easily fulfilled.

There are various methods of conserving fat. First, the economical use of table fats by serving smaller portions and by the elimination of all waste. Second, the saving of cooking fats, and third, the proper use of all types of fat.

A large saving in cooking fats can be made by utilizing all the fats that come into the home. Beef and mutton suet can be rendered, the fats left over after the meal has been cooked can be clarified, that is, freed from all objectionable odors, tastes or color, and all drippings can be utilized for frying and shortening.

The saving of the war foods is not difficult, but it takes most housekeepers into new realms of cookery; and for this reason practical recipes showing how to make the most of these foods have been provided.

Save Fat

To render fat run the lumps through the household meat grinder or chop fine in the chopping bowl. Then heat in the double boiler until completely melted, finally straining through a rather thick cloth or two thicknesses of cheesecloth, wrung out in hot water. By this method there is no danger of scorching. Fats heated at a low temperature also keep better than those melted at higher temperature. After the fat is rendered, it should be slowly reheated to sterilize it and make sure it is free from moisture. The bits of tissue strained out, commonly known as cracklings, may be used for shortening purposes or may be added to cornmeal which is to be used as fried cornmeal mush.

To Render Strong Favored Fats

To mutton, duck or goose fat add equal amount of beef suet or vegetable fat and render same as suet. This may then be used for shortening or pan broiling for meat or fish dishes, and not have the characteristic taste of the stronger fats.

When rendering strong mutton, duck or goose fats if a small whole onion is added the strong flavor of the fat is reduced. Remove the onion before straining. It may be used in cooking.

To Clarify Fats

Melt the fat in an equal volume of water and heat for a short time at a moderate temperature. Stir occasionally. Cool and remove the layer of fat which forms on the top, scraping off any bits of meat or other material which may adhere to the other side.
ingg fg-go- Aro rats cn cf shrdlu etaoi

Fats which have formed on top of soups, of cooked meats (such as pot roast, stews), salt meats (such as corned beef, ham, etc.), or strong fats, such as from boiled mutton, poultry and game, may be clarified in this way and used alone or combined with other animal or vegetable fats in any savory dish.

Care of Fat after being used for Cooking

If fat is used for deep fat frying as croquettes, doughnuts, fritters, etc., while fat is still hot, add a few slices raw potato and allow it to stay in the fat until it is cool. Remove potato, strain fat, allow to harden and it is

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What I have suffered is a far better guide than any MAN'S experience gained second-hand.

I know your need for sympathy and health.

And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.

Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.

If you suffer from pain in the head, back, or bowels, feeling of weight and dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

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To Mothers of Daughters, I will explain a simple home treatment which speedily and effectually dispels green-sickness (chlorosis), irregularities, headaches and lassitude in young women, and restores them to plumpness and health. Tell me if you are worried about your daughter. Remember it costs you nothing to give my method of home treatment a complete ten day trial, and if you wish to continue, it costs only a few cents a week to do so, and it does not interfere with one's daily work. Is health worth asking for? Write for the free treatment suited to your needs, and I will send it in plain wrapper by return mail. Cut out this offer, mark the places that tell your feelings, and return to me. Write and ask for the free treatment to-day, as you may not see this offer again. Address:

MRS. M. SUMMERS, Box 309 Windsor, Ontario

ready for use. The potato absorbs odors from fat.

How to Make Savory Fats

To one pound of unrendered fat (chopped fine) add one slice of onion about one-half inch thick and two inches in diameter, one bay leaf, one teaspoonful salt, and about one-eighth teaspoonful of pepper. Render in a double boiler and strain.

Pastry Made With Dripping

Well made, digestible pastry should nave a minimum of fat to make a crisp, flaky crust. It should be crisp, not brittle; firm, not crumbly. Pastry may be made in large amounts, kept in refrigerator for several days and used as needed. Roll out only enough for one crust at a time, as the less pastry is handled, the better. Whole wheat makes a more tasty crust than bread flour and all rye pastry has even better flavor than wheat flour pastry. Half wheat or rye and the other half cornmeal (white or yellow) makes an excellent pastry for meat or fish pie.

Soap from Leftover Fats

(Fat for soap should be fat which is no longer useful for culinary purposes.)

1 can lye, 6 pounds fat, 1 quart cold water.

To lye ad dwater, using enamel or agate utensil. When cool add the fat, which has been heated until liquid Stir until of consistency of honey (about 20 minutes). Two tablespoonfuls ammonia or 2 tablespoonfuls borax may be added for a whiter soap.

SEPTIC TANK MAKES MODERN CONVENIENCES OF HOME POSSIBLE

Bath, Toilet, and Kitchen Sink may be Enjoyed in Country as well as City

Every home should have an indoor toilet, bath, and kitchen sink. Even though the home be in the country or in a small town, it may, according to Frank P. Goeder, of the Colorado Agricultural College, be equipped with these conveniences. Mr. Goeder says:

"The concrete septic tank solves the problem of disposing of house wastes where the modern city sewer is not to be had. It is intended only as the best substitute for a city sewerage system and when properly built has many advantages over the cesspool. The septic tank will transform the wastes from the house plumbing, and their final disposal will be in a safe and simple way.

"Concrete septic tanks are easy to build and not expensive. The cost of operation and maintenance is very small, and they give satisfactory service indefinitely."

HOT WATER AND EAUTY

One of the quickest, easiest and cheapest ways to gain a lovely complexion is to drink quantities of hot water. And by the way, this is an excccdingly healthy habit. A senator was a nervous and physical wreck some years ago, and attributes his complete cure to a course of exercises an the drinking of quantities of hot water.

As a beginning, drink a glass of hot water on arising, before breakfast of course. If you feel sick at the stomach, this alone will make you better, or the addition of a little lemon juice or a half a teaspoonful of baking soda, will overcome the trouble.

Drink a glass of hot water before lunchcon, before dinner and before going to bed. This flushes out the system, the heat stimulates the blood in the stomach and aids digestion, raises any gas that may have formed, clears out the whole bowel system. If you have pimples, or the blackheads that always accompany this affliction, a few months of this hot water treatment ought to clear up the skin wonderfully.

Few people drink as much water as they should. Doctors say every adult should drink around two quarts daily. This is eight full sized glasses. Four glasses of hot water taken every day would be half as much as you should drink, your tea and coffee and an occasional glass of cool water besides, would bring it up to the prescribed amount. Many thin people have gained flesh by drinking more water with their meals, that is, right around meal times, many fat women reduce by taking water between light meals, when the system seems to want more food. Water overcomes the gnawing feeling, and the body sono accustoms itself to the elssened diet.

Berry Season is here

A Sunbonnet For The Asking

Those who are familiar with the Dr. Chase Plan of Health will not be surprised at our offer. Others may be. Hence a word of explanation is necessary.

Dr. Chase, through a long professional career, firmly maintained that most sicknesses were due to NEGLECT, and held that the neglect was mainly of little things, which added together, make the sum total of human life. At this season of the year, many are called into the fields—especially woman and girls—who are not inured to the burning rays of the sun.

Unaccustomed to the extreme heat, the skin of the face, neck and arms is delicate. The sudden change allows the sun's rays to penetrate to the inner layer of the skin, where the blood vessels are situated. The result—heat, swelling and congestion.

Of course, it is desirable to acquire a healthy tan. Everyone admires it. But no one cares to suffer for days and weeks from sunburn and then have the skin become rough, coarse and hard.

Now, it so happens that Dr. Chase's Ointment not only relieves irritations of the skin, but also keeps the skin soft, smooth and velvety, even under the most trying circumstances.

Again, the results of any irritation of the skin, whether from sunburn chafing or slight scratches and wounds, may prove MORE SERIOUS, since eczema usually has its beginning under such conditions. The success of Dr. Chase's Ointment as a treatment for eczema is too well known to require more than mention here; for it is in the treatment of eczema that Dr. Chase's Ointment has acquired its international reputation.

But about the bonnests. We must not forget them. Why should we spend money in advertising our willingness to give away sun-bonnets? Why should we give them away? That is the pertinent question. The explanation is simple; The Dr. Chase Plan of Health is to prevent illness, as well as to cure it. The sunbonnest cost us less than they would cost you if you had to buy them, and if we can be of service in this little, and perhaps important matter, it will give us pleasure. And, besides, we will have reminded you that the work conducted by Dr. Chase in the days of your grandparents is still being carried on.

While we have provided many thousands of sunbonnets for distribution, it is our natural desire that this offer shall not be abused. DON'T write for a bonnet unless you expect to use it. DO write freely, and without hesitation, if you expect to be exposed to the heat of summer days. The sun-bonnet will be delivered through the mail at our expense.

Along with it, we shall send you—also free—a sample box of Dr. Chase's Ointment. Once you become familiar with the soothing, healing influence of this Ointment, scores of ways will be found in which to use it to the advantage of your skin and of your personal comfort. Edmanson, Bates & Co., Toronto.

Dr. Chase's Kidney-Liver Pills, one pill a dose, 25c. a box, at all dealers or Edmanson, Bates & Co. Ltd., Toronto

WHEN FRYING FISH

Before putting the fish on to fry, sprinkle flour in the hot fat. It will keep the fat from spattering and the fish from sticking to the pan.

SNAPS FOR RIBBON BOWS

Instead of sewing ribbon bows on children's wash dresses, put them on with snap-fasteners. The bows are easily removed when the dress is to be laundered, and can be replaced much more quickly than when sewed in place

STRONGER BUTTONHOLES

A row of machine-stitching around buttonholes in knit underwear prevents them from stretching, and makes them more lasting.

During sickness the telephone-bell may be muffled but not entirely silenced, by folding a slip of paper and placing between the clapper and one bell.

To remove grease stains from carpets, spread a piece of heavy brown paper over the spot and apply a hot iron.

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PICKLE AND PRESERVE WHAT YOU CAN'T CAN

Preserves

In preserving, the proportions of fruit to sugar are usually one pound of fruit to three-quarters of a pound of sugar. It is necessary to cook the fruit in the sirup until it is thoroughly saturated.

Peach Preserves

12 pounds of peaches
9 pounds of brown sugar.

Peel peaches. Cut in halves if small, or quarters if large. Place the sugar in an agate kettle, and add enough water to make a thin sirup. Drop the peaches into the sirup slowly. Add the peaches a few at a time. Cook until tender. Pack away in sterilized glass or stone jars.

Pear Preserves

12 pounds of pears
9 pounds of brown sugar
3 sticks of cinnamon.
½ oz. whole cloves

Peel pears and cut into uniform pieces that are not too small. Place the sugar in an agate kettle, and add enough water to make a thin sirup. Add the pears a few at a time, and cinnamon and cloves. Cook until pears are soft. Pack away in sterilized glass or stone jars.

Cherry Preserves

12 pounds of cherries.
9 pounds of brown sugar.

Select firm cherries; remove seeds. Folow the directions given for peach and pear preserves. Pack away in sterilized glass or stone jars.

Strawberry Preserves

12 pounds of strawberries.
9 pounds of brown sugar

Wash berries a few at a time by letting cold water run through them in a colander. Hull; weigh after hulling; place layers of berries and sugar in preserving-kettle. Allow to stand overnight. Remove berries from sirup. Boil sirup until thick. Drop berries in and boil ten minutes, keeping berries under sirup with a wooden spoon. Remove scum that rises. Store in sterilized jars.

Gingered Pears

12 pounds of pears.
9 pounds of sugar.
5 ounces of gingerroot or 2 1/6 level tablespoonfuls of powdered ginger.
Juice and the grated yellow part of the rind of 4 lemons.

Grind pears through a meat-chopper. Put all ingredients in enameled kettle. Cook for one hour, or until amber colored and of the consistency of jam.

Carrot Marmalade

1 doz. grated raw carrots.
3 lemons.
1 teaspoonful cinnamon.
½ teaspoonful cloves.
1 teaspoonful allspice.

Add three-fourths of a cupful of brown sugar to each cupful of grated carrots, and allow the mixture to stand overnight. In the morning, add the strained juice of the lemons, the cinnamon, cloves and allspice. Cook this mixture slowly for one hour.

The cinnamon, cloves and allspice may be omitted and two teaspoonfuls of ground gingerroot substituted.

Grape Fudge

9 pounds grapes
7 pounds brown sugar
½ pound walnut-meats
1 pound raisins.

Wash fruit and remove from stems; remove skins. Boil pulp until skins become loosened, then put the pulp through a colander to remove seeds. Chop skins and raisins; add to sugar and pulp; cook until thick. Add nuts just before it is done. Put in sterilized jars.

Orange Marmalade

Select thin-skinned oranges. Wash, weigh and quarter; slice pulp very thin, remove seeds, and cut rind in thin, short strips. To each pound of fruit add three pints of cold water, cover and let stand twenty-four hours. Uncover; cook for three hours, slowly, until tender. Let stand twenty-four hours, then weigh and to each pound of fruit and juice add one pound of brown sugar. Add rind. Cook slowly one-half to three-quarters of an hour until rind is clear and sirup will jelly; pour into glasses, let cool, and seal.

Crab-Apple Marmalade

Use pulp left over from crab-apple jelly. Rub it through colander; for each cupful of fruit pulp add three-fourths cupful of sugar. Add lemon, cut fine, allowing one-half lemon to every twelve cupfuls of pulp. Cook very slowly, stirring constantly until thick.

Any fruit pulp or combination of fruit pulp may be used. The lemon may be omitted and pineapple substituted.

Plum Conserve

5 lbs. blue plums
3 pounds brown sugar
1½ pounds seeded raisins.
Juice of three oranges
Rind of one orange
Juice of two lemons.

Pit plums, but do not peel. Dissolve sugar in the orange and lemon juice and add fruits and grated orange-rind. Cook until a glaze forms over the surface of the fruits. Put in sterilized jars.

Spiced Currants

Wash, drain, and remove currants from stems. Weigh fruit and use this proportion: three pounds currants to two pounds brown sugar and two-thirds cupful of vinegar. Put all together in preserving-kettle, add ground cloves and cinnamon tied in a bag, one a nad half teaspoonfuls spice to three pounds fruit; cook slowly about one and a half hours.

Pickling

General Directions

1. Always use porcelain kettles and wooden spoons.
2. Green vegetables should be soaked in brine and thoroughly drained to remove the strong flavor.
3. Spice carefully, so that all will blend and not one flavor predominate.
4. Use the best cider vinegar. Do not boil it, for boiling makes it lose its strength.
5. Nasturtium seeds or a small piece of horseradish root placed in each jar keeps the vinegar from molding.
6. For sweet pickles, brown sugar should be used. It makes a richer and better-flavored sirup than white sugar. The sirup should be rich enough to keep without sealing.

Green-Cucumber Pickles.

4 quarts small green cucumbers
2 quarts boiling water
3 tablespoonfuls salt.

Wash and dry the cucumbers, put in stone jar and add brine made with salt and boiling water. Allow to stand for three days. Drain cucumbers, bring brine to boiling-point, pour it over cucumbers, and again allow to stand for three days. Repeat; drain a third time. Scald in the following mixture:

1 gallon vinegar
4 red peppers (chopped)
2 sticks cinnamon
2 tablespoonfuls allspice berries.
2 tablespoonfuls whole cloves
4 cupfuls brown sugar

Pack in stone jar and cover with liquor.

Proportion for Sweet Pickles

7 pounds fruit
10 cupfuls sugar (brown)
2 cupfuls vinegar
1 cupful water
¾ cupful mixed spices
⅛ cupful mace
⅛ cupful whole cloves
½ cupful whole cinnamon.

Watermelon-Rind Sweet Pickle

7 pounds prepared watermelon rind
3 pints vinegar
4 pounds sugar (brown)
¾ ounce cloves (whole)
2 sticks cinnamon
1½ ounces gingerroot.

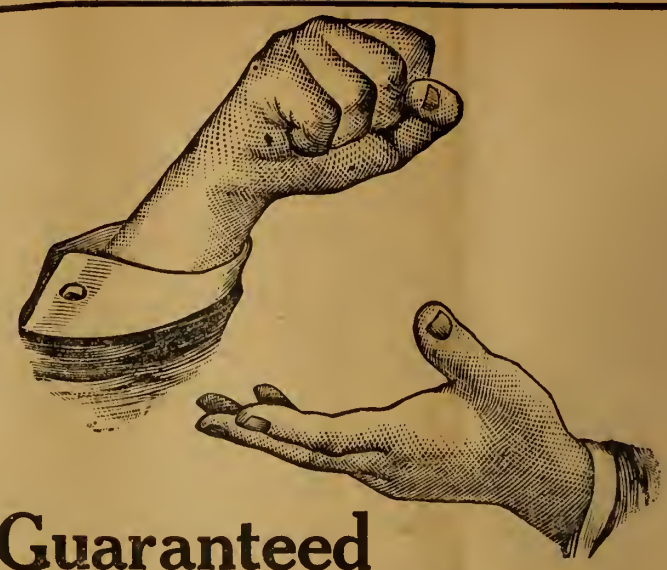
Prepare seven pounds of rind by removing the green part and cutting off the pink melon until the rind is firm. Cut these pieces into uniform strips one inch wide and two inches long. Let stand twenty-four hours in weak brine. (Brine: one tablespoonful salt to one quart water.) Rinse off and scald until tender in alum water. Rinse again in cold water. Place in porcelain-lined kettle; pour in vinegar, sugar, cinnamon, and slightly pounded gingerroot. Tie cloves in bag and add. Cook until rind is tender. Put in jars and seal.

Sweet-Pickled Peaches

4 cupfuls vinegar
5 cupfuls sugar
¼ cupful (scant) mixed whole spices
½ peck peaches

Select ripe but firm peaches. Scald and cold-dip peaches to remove skins, and pare. Make a sirup of sugar, vin-

Clean to handle. Sold by all Druggists, Grocers and General Stores.



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McClary's own heating engineers are at your service when you buy a Sunshine Furnace, to give you free expert advice on your home-heating requirements. Write to the nearest McClary Branch, and ask for particulars about this service. A booklet, "Comfort in the Home," makes clear all the things you want to know about furnaces and it is sent free on request.

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egar and spices tied in a bag; skim, and boil twenty minutes. Cook peaches a few at a time until tender; put in jar; let stand twenty-four hours. Repeat three times, then pour sirup over peaches; the third time cover the peaches with the sirup which has been cooked down until thick. Pack in sterilized jars.

Sweet Pickled Crab-Apples

2 quarts vinegar
6 pounds brown sugar
2 teaspoonfuls cloves
2 teaspoonfuls whole cinnamon.

Wash crab-apples and remove blossom ends, and add apples. Make sirup of vinegar, sugar and spices, and cook in this sirup twenty minutes; store in jars, boil sirup down, and pour over fruit.

Mustard Pickles

1 gallon cider vinegar
1/3 pound ground mustard.
3 tabelspoonfuls corn-starch
1½ pounds brown sugar
½ oz. turmeric
½ oz. curry-powder
¾ teaspoonful Cayenne
½ oz. celery-seed.

Make a dressing of the above ingredients. One pint small cucumbers; or large ones cut in pieces, may be used. Soak overnight in brine, using one cupful salt to two quarts of water, one pint small white onions, one pint chopped green tomatoes, three bell peppers chopped, leaving out seeds, and one small cauliflower may be used, but should be cooked in boiling salted water until tender. Before adding to the mixture, put vegetables in jar in layers, and pour over them the boiling dressing. Reheat dressing the following day, and thicken if necessary, by making a paste of the cornstarch and a small amount of the vinegar.

Olive-Oil Pickles

8 pounds small cucumbers, sliced
1 pound small white onions, sliced

Let stand in weak brine twenty-four hours (one tablespoonful salt to one quart water). Drain, rinse in cold water, and add:

1 oz. white mustard-seed
1½ ozs. celery-seed
1 cupful olive-oil
½ cupful vinegar
1 teaspoonful salt
1 teaspoonful brown sugar

Mi xwell; put in jars; add vinegar to cover.

CONSERVATION RECIPES

Standard ½-Pint Cup Used.
Measurements Level.

Soft Molasses Cookies

Put in a measuring cup four teaspoonfuls clarified bacon fat (not browned in the least); add three teaspoonfuls boiling water, then fill the cup with N. O. molasses. Add half a teaspoonful salt, half a teaspoonful ginger or spices to taste and one teaspoonful soda sifted with one cup of flour; mix and add enough more flour to make a soft dough. Roll rather thick. Cut in rounds. Bake in a moderate oven.

Maple Sauce for Puddings or Waffles

Cook three-fourths a cup of maple syrup and one teaspoonful of butter till it spins a thread; pour on two egg-whites well beaten. When cool add half a cup of cream whipped very light.

BROWN BREAD

Recipes for brown bread as used by the Domestic Science classes in the Ontario Agricultural Colleges:

Whole Wheat Bread

One cake Fleischmann's yeast, 1 tablespoon melted lard, 1½ cups lukewarm water, 7½ cups whole wheat flour, 1½ cups milk scalded and cooled, 1½ teaspoons salt, 3 tablespoons yellow sugar.

Dissolve yeast and sugar in luke warm liquid. Add lard, then flour and salt gradually, as whole wheat flour absorbs moisture slowly.

Knead thoroughly, being careful to keep the dough soft or "slack." Place in a greased bowl, cover and leave in a warm place, to rise for about hours.

When double in bulk, turn out on a board. Mould into loaves, place in greased pans, cover an set to rise again for about one hour or until light. To glaze, brush top of loaf with milk.

Bake one hour, in a slower oven than for white bread.

(If wanted for over night, use half cake yeast. Water may be substituted for the milk.)

RYEMEAL PANCAKES

2 eggs, well beaten, 1½ cups sour or buttermilk, ½ cup sour cream, ½ teaspoonful salt, white flour for batter, rye meal (sifted), 1 teaspoonful soda.

Into the eggs, milk and cream stir the salt and white flour to make a thin batter; sift the meal and reserve the bran for muffins. Add the soda to a little of the meal and sift into the batter. Add more meal if needed. Bake on a hot griddle.

Rye Bread.

One cake Fleischmann's yeast, 5 cups rye flour, 1 cup milk, scalded and cooled, 1½ cups bread flour, 2 cups lukewarm water, 1 tablespoon salt, 1 tablespoon lard, melted.

Dissolve yeast in lukewarm liquid. Add 2½ cups rye flour, or enough to make a sponge. Beat well, cover and leave in a warm place, free from draft, to rise about two hours. When light, add white flour, lard, remainder of rye flour and salt. Keep the dough rather soft. Kneed until smooth, place in a greased bowl, cover and let rise until double in bulk—about 2 hours. Mould into loaves and let rise until light—about 1 hour. Glaze. Bake slowly one hour or longer, according to size of loaf.

HOW TO USE HOUSE SLOPS

What use can be made of house slops or urine which used to be thrown around an old, large apple tree, which killed the tree? Will you tell me whether this liquid can be utilized as a fertilizer in any way, and if so, the proper mixture. N. B. S.

As a rule these slops are too strong in ammonia for direct application. Diluted half and half with water they can be sprinkled over the lawn with good results. In some cases they are kept in a closed barrel, mixed with water and sprinkled over the grass at night. A better way is to make a compost heap in some secluded place and pour the slops over it. Such a heap may be made of any waste, such as old sods, black soil, weeds or anything that will absorb liquids. The slops are poured on this heap. It absorbs the liquid and holds the plant food. In some cases the pile of coal ashes is used for this purpose and it serves well. The pile is made up with a dishing or saucer-like top and the slops are poured into this depression. The coal ashes absorb the liquid and when needed on the field or garden the ashes are spread like any fertilizer. They carry the ammonia and potash contained in the slops and are not offensive to handle. All liquid manures are richer in nitrogen and potash than in phosphoric acid, and when used on the garden or farm acid phosphate or bone should be used with them.—Rural New Yorker.

RUSTY MOLDBOARDS

For cleaning a rusty plow moldboard a piece of brick is good. Oil should be used on the moldboard when the pow is put away for a few days or longer.

See that none of the "kick" is out of the h p tedder through the loss of a prong from one or more of the forks. Tedding is worth doing well.

Keep the shafts on the horse rake tight. A wide rake seems to put a great deal of side shake on the shafts, and if they are allowed to work loose the ends are liable to split ot.

KA-LOR-OID
TRADE MARK REG
COLORED RU-BER-OID ROOFING
BEWARE IMITATIONS

Also Makers of
"RU-BER-OID" Wall and Ceiling Board
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KA-LOR-OID adds to all the good qualities of RU-BER-OID, the most attractive colors for a roof—Tile Red or Copper Green; and these colors are permanent.

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STANDARD PAINT CO., OF CANADA, Limited
MONTREAL TORONTO WINNIPEG VANCOUVER

It's an Honour to be a Good Cook

TO BE ABLE TO FEED THE FAMILY WELL AND ECONOMICALLY IS REAL WAR WORK

BENSON'S CORN STARCH

is of vital importance to the good cook. It is the foundation of dozens of every-day desserts—gives lightness and flavour to homemade "war bread"—makes far smoother gravies and sauces than flour.

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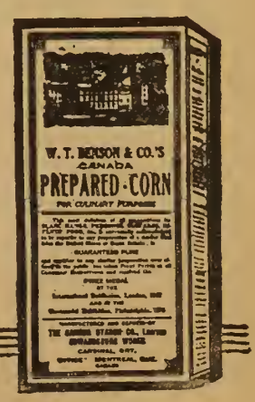

MARKETS.

St. John

Beef, country, 12c to 16c.
Beef, butcher or Western, 20c to 25c.
Veal, 17c to 20.
Hogs, light, 25c to 26c.
Hogs, heavy, 20c to 22c.
Lamb, 35c per lb.
Mutton, 16c to 20c.
Beef Hides, 16c.
Sheep Skins, $1.00.
Calf Skins, 45c. lb.
Potatoes, new, $1.00 per bus.
Potatoes, old, $5.00 to $5.50 per bbl.
Carrots, 5c to 8c per bunch.
Turnips, $1.00 per bus.
Parsnips, none.
Oats, $1.25 bus.
Cornmeal, $4.00 per 100 lbs.
Chickens, 50c to 60c per lb.
Fowl, 35c to 40c per lb.
Turkeys, 40c to 50c per lb.
Butter, Dairy, 35c to 40c.
Eggs, 45c to 48c.

Halifax

Beef, carcass, 13c to 18c lb., retail, 8c to 30c.
Veal, carcass, 15c to 18c.
Hogs, none offering.
Lamb, carcass, 30c lb.; retail, 32c to 35c.
Mutton, carcass, 20c to 25c.
Beef Hides, 15c.
Sheep Skins, 50c shorn.
Calf Skins, 28c to 30c.
Potatoes, $1.30 per bushel.
Carrots, none.
Turnips, none.
Parsnips, none.
Oats, 95c to $1.05 per bushel.
Cornmeal, $4.25 to $4.50 per sack.
Bran, $2.20 to $2.30 per sack.
Oatmeal, $12.00 to $13.00 per barrel.
Middlings, $2.50 to $2.60 per bag.
Oil Cake, $3.80 to $4.00 per bag.
Buckwheat, none.
Ontario Flour, $12.00 to $12.50.
Manitoba Flour, $12.25 to $13.00.
Butter, Creamery, 42c to 45c.
Butter, Dairy, 35c to 38c.
Cheese, 22c to 23c for wholes; 23c to 24c for twins.
Eggs, 42c per dozen.
Hay, 80c to 80c per 100 lbs.
Straw, pressed, $13 to $14.00 per ton.
Wool, unwashed, 71c to 73c lb.

Mill Feeds Very Scarce

The supply of mill feed for 1918-19 will be limited. At present the mills of Canada have no wheat to grind and are consequently engaged in producing substitutes. The shipment of wheat flour to points east of Montreal is forbidden, except under special license from the food controller. The outlook for mill feed is not encouraging. Oil cake is quite scarce. The Maritime Farmer has booked some at $64.00 per ton F. O. B. Montreal, for September delivery. Arrangements are also being made to get a supply of special feeds. The analysis of this is now being made and a number of cars will be brought into the provinces to try out. If they prove satisfactory, a large quantity will be bought.

HERE'S A CHANCE FOR FEED

The Maritime Farmer has a chance to get a supply of special feed, which will be handled at cost for Agricultural Societies, the members of which are subscribers for this paper. The outlook for feed this fall is decidedly bad. Southern Alberta's wheat crop is a failure. The amount of wheat which will be alloted Canadian mills to grind this season will be much less than a year ago. We can supply a feed which shows the following content: protein, 13 per cent; fat, 4 per cent; fibre, 19 per cent; carbo hydrates, 64 per cent. This will be available at $25.00 per ton, and freight charges, which, under the new freight tariff will be advanced 25 per cent. If you want this feed, act quickly. Send us your order and accompany it with a notification from your bank that the draft for the feed will be met on presentation. There is no other agreement we will consider. The Maritime Farmer handles this business at absolute mill prices. We get no commission whatever on the goods. You pay your own bills, but we will not order any goods until we have a bank guarantee as to payment. Please remember this and save time and expense.

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McLAUGHLIN
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Light Six
Light in weight yet powerful and efficient in performance
Model E-6-63 develops more power per pound of car weight than any car on the market.
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E-6-63

MONTREAL

Demand For Eggs Steady—Potatoes Tending Lower

Notwithstanding the inferior quality of eggs now being offered in the country owing to the extreme heat that has prevailed of late there has been no easing off in prices in the interior owing to the fact that the demand for supplies continues good. In sympathy with the above and the liberal movement for the season of the year for immediate consumption the tone of the local market remains firm and a good steady business is passing in a wholesale jobbing way. The receipts today were 1,562 cases, as against 1,274 for the same day last week, and 996 for the corresponding date a year ago.

We quote wholesale prices as follows:

Selected new laid eggs....51c to 52c
No. 1 stock.....47c to 48c
No. 2 stock.....45c to 46c

An easier feeling prevailed in the market for potatoes today owing to the larger offerings of supplies on the public city markets, and the prospects are that prices are still lower in the near future. The demand today was fair for small lots to meet immediate wants, and sales were made at $2.25 to $2.40 per bag of 80 lbs., ex-store.

The trade in maple product was slow, and there were no new features in the market to note. Prices rule firm on account of the small supplies available. Maple syrup, in wood, was quoted at $1.90 to $2 per gallon, and in tins at $2.10 to $2.25 of one gallon. Maple sugar continues to be enquired for at 23c per lb.

Millfeed and Rolled Oats

Montreal—There was no further change in the condition of the market for millfeed today, but the feeling in all lines was very firm at the recent advance in prices noted on account of the continued steady demand for supplies and the somewhat limited offerings. Sales of feed cornmeal were made at $68 per ton, including bags.

delivered, put oat moullie at $67, pure barley feed at $67, mixed moullie at $55, shorts at $40, and bran at $35. A good steady trade continues to be done in rolled oats for both local and country account, and the tone of the market is firm, with sales of broken lots of standard grades at $5.20 to $5.30 per bag of 90 lbs., delivered. A fair volume of business was reported in cornmeal and prices were unchanged, with sales of broken lots of Golden grade at $6.25 to $6.40, and bolted at $4.50 to $4.75 per bag.

Cattle Trade Dull and Hogs 25c Higher at Toronto

Toronto—At the Union Stockyards the receipts today consisted of 461 cattle, 141 calves, 411 hogs and 159 sheep and lambs. The cattle trade was decidedly dull and slow. Light, thin cattle, particularly heifers, are in very poor demand. Several cars of western cattle of this class just arrived, found a very slow market and prices very shaky. It was difficult, in fact to get bids on light medium butchers steers and heifers. Weighty steers are all right and in good demand for export. Three or four small lots of good heavy steers sold around $14 to $14.50. A few fat cows and bulls sold at about steady prices up to $10.50. For the rest, little was offering, and less was wanted. Sheep were steady, and lambs a little firmer. a few extra choice selling up to $20. Choice veal calves held steady, but common sort were weak. Hogs were firm and 25c higher at $19.25, fed and watered. A few were sold at $19, but most at the 25c higher.

Dairy Produce Trade

Montreal, Aug. 2—The receipts of butter today were 415 packages, as against 1,033 for the same day last week, and 755 for the corresponding date a year ago. At Gould's Cold Storage today the offerings amounted to 700 packages of creamery butter, for which the demand was fair, and all sold at 42c to 42½c per lb., f.o.b., country points, which prices are about ½c per lb. lower than this day week. There was no actual change in the condition of the local market, but the undertone was easy owing to the fact that the demand was somewhat limited from both local and outside buyers, and business on the whole was quiet.

We quote wholesale prices as follows:

Finest creamery.....43¾c to 44c
Fine creamery.....43¼c to 43½c
Finest dairy.....38½c to 39½c
Fine dairy.....37c to 37½c

The receipts of cheese today were 18,239 boxes, as compared with 35,582 for the same day last week, and 23,818 for the corresponding date a year ago. At Gould's Cold Storage today there were 6,000 boxes offered, for which the demand was good, and all sold at 22¼c per lb., f.o.b., country points. Owing to the increase in railway freight rates which went into effect on and after August 1st, exporters of cheese in some cases stated today that they would, no doubt, have to reduce present prices now being paid to factorymen in order to meet the same.

The Dairy Produce Commission is paying the following prices:

No. 1 cheese.....23c
No. 2 cheese.....22½c
No. 3 cheese.....22c

Grain Prices Score an Advance

Winnipeg, Aug. 1.—There was little or no change at today's session in the cash markets, except that there was a better inquiry for oats. The offerings today were very light in all grains. Oats closed 1⅜c higher for July, October ¾c higher and December ¾c higher. Flax closed 4½c higher for July and 1c lower for October

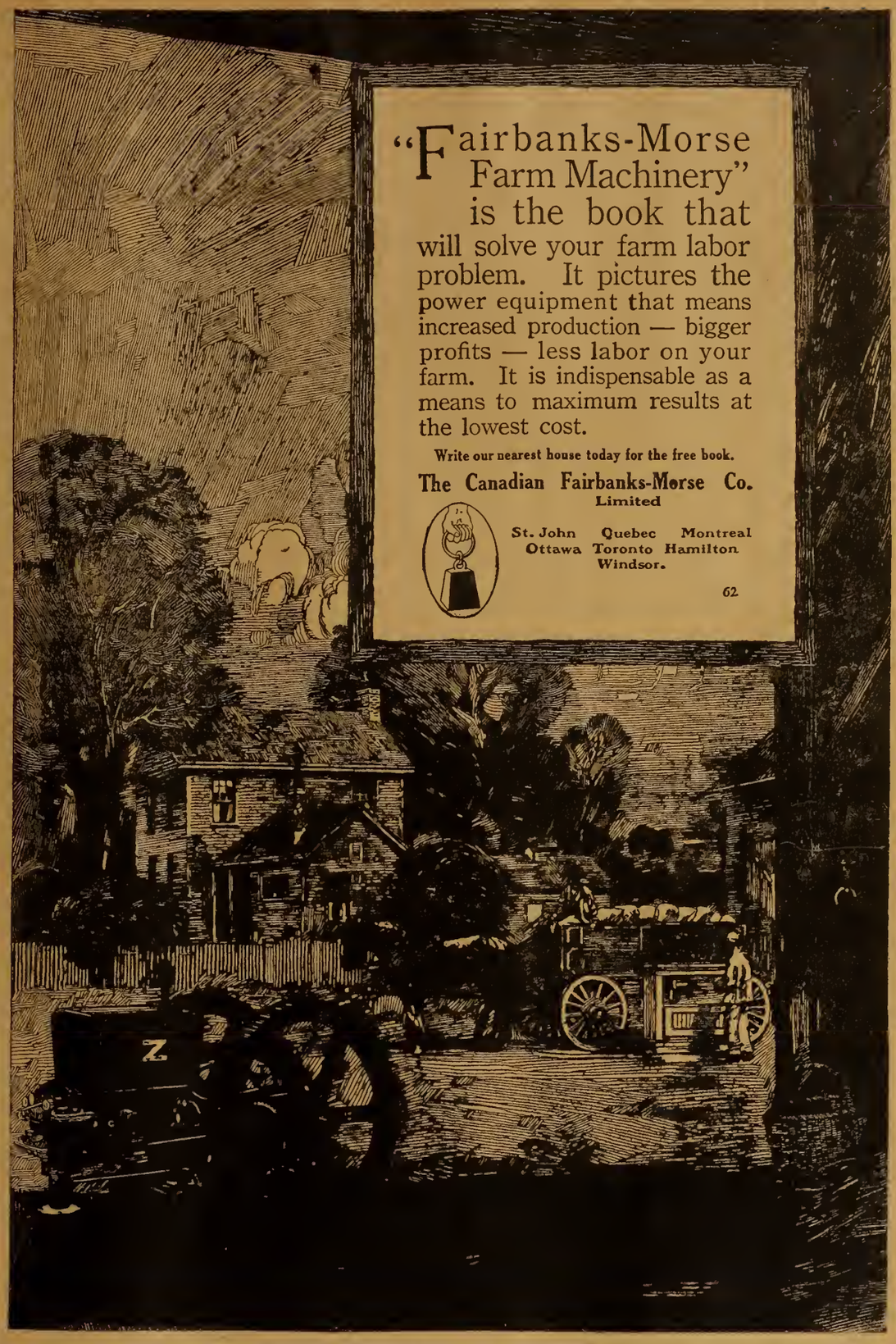
Fluctuations in grain today were:

Oats:

	Open.	High.	Low.	Close.
July	87¼	.89⅜	.87⅛	.89⅜
Oct.	81½	.82⅜	.81	.82⅜
Dec.	77⅜	.78¼	.77⅜	.78¼

Flax:

July	$4.52	$4.58	$4.52	$4.58
Oct.	4.46	4.48	4.46	4.48


"Fairbanks-Morse Farm Machinery" is the book that
will solve your farm labor problem. It pictures the power equipment that means increased production — bigger profits — less labor on your farm. It is indispensable as a means to maximum results at the lowest cost.
Write our nearest house today for the free book.
The Canadian Fairbanks-Morse Co. Limited
St. John Quebec Montreal
Ottawa Toronto Hamilton
Windsor.
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The Baled Hay Market

According to advices from Ontario the yield of hay in the province on the whole this year will be little, if any, below an average yield per acre, and the acreage is large. With reference to the province of Quebec, the yield in many sections will be much larger than last year and the quality much better. There was no change in the condition of the market today, business being still rather quiet and prices unchanged, with car lots of No. 2 hay quoted at $14, No. 3 hay at $13, clover mixed hay at $8 to $10, and inferior grades at $4 to $6 per ton ex track.

LIVE STOCK AND THE ORCHARD

(Continued from page 683)

industries of the American farmer I refer to poultry raising. Poultry should not only be part of the general plan on the fruit farm, but in addition should be kept on every American farm. It is rather unfortunate that we find grain farmers as well as fruit growers going to the butcher or the groceryman for poultry that ought to be produced at home. Poultry on the fruit farm will not only furnish the family with food stuffs among the most nutritious of all that are available for human consumption, but in addition, if properly handled, can be made to yield during the year no inconsiderable income.

The great fruit industry of the Northwest will lose nothing of its importance as a highly-organized specialty, but on the other hand will be strengthened and rendered more stable and permanent by the adoption of diversification to the extent of live-stock keeping along the lines suggested above.—By Prof. L. J. Iddings, University of Idaho.

TIRES ADVANCE IN PRICE

The Maritime Farmer has been advised that the cost of automobile tires, which it has been supplying to its subscribers, advanced to-day seven and one half per cent. Please govern yourself according when ordering. We still have a few 30x3½ in tires on hand, which will be sold at the old price, to subscribers only.

MAKING A DRY CONCRETE FLOOR FOR THE PIG PEN

Some hog breeders say they prefer not to have concrete floors in farrowing pens because they are colder than wood or dirt floors and are often damp. I have met other breeders who say they would not have any other than concrete floors. These are personal opinions gained from experience, and usually the men who like the dirt floor have a gravelly subsoil or their house is placed where it has the advantage of good natural drainage. A concrete floor will not shut out water or dampness unless it has good underdrainage.

Personally, I prefer the concrete floor because it can be kept more sanitary. If sufficient litter is kept in the pens the floor can be made dry and warm, and this is essential at farrowing time. We put a concrete floor in the hog house that has given good service, and does not collect moisture on the surface.

The foundation of this floor is cinders which were secured from a local heating plant and electric light plant. They form air spaces beneath the concrete so that in wet weather little moisture is present where the concrete joins them. They were put in about six months before the concrete so that they would become well settled; a depth of from four to six inches is sufficient, or even less than that may be used.

In laying the concrete the cinders were first thoroughly wetted and tamped to within five inches of the height of the desired floor. Then four inches of concrete, mixed in the proportion of 1.6, was put on and well tamped to make a good union with the cinders. This was mixed with water so it would pour but not thin enough to run. The top one-inch layer was mixed in the proportion of 1.5, made thin enough to run, and when smoothed and troweled a film of water would form on the surface.

The same method was followed in cementing the eight-foot driveway and feeding floor. In the driveway we started at one end and made blocks about three and four feet wide. This is a convenient width to work handily. If the blocks are made wider than this it is more difficult to level them and do the troweling work.

Stakes were driven on each side of the driveway and a straight edged board nailed in position lightly to them, then another stake was driven in the centre to prevent the board bulging. As soon as a block or section was filled and leveled the nails were pulled from the stakes and the stakes and board were moved on to make the next section. There is no need of waiting till the concrete gets dry, but care must be exercised when removing the board to not pry it up and break the edges.

In a long narrow space like a driveway it would be a little handier I expect to put a form down the centre lengthwise and complete one-half of it at a time. If the other half can be finished a few days later it makes a convenient place to handle and mix the convrete on the part that has hardened.

J. L. JUSTICE.

WHEN COW CHOKES HOW TO TREAT HER

Editor "Maritime Farmer"

Kindly advise re the following questions and oblige:

1. What is the best thing to do when a cow is choking?

2. Have you any remedy to offer as to making a cow milk easier?

OLD SUBSCRIBER.

Ans.

1. The first thing to do is to examine the mouth and throat and see if you can locate the cause of the trouble; also examine along the left side of the neck to try and find out where the obstacle is lodged. If you can see or reach it, put a plow clevis crosswise in the cow's mouth, run your hand down the gullet and bring it up. In order to grasp it easily let someone hold it firmly on the outside. If you cannot reach it, pour half a pint of raw linseed oil down as a drench, then move the obstruction by working it with the hand from the outside. If no linseed oil is at hand use other oil. If this fails use a probang. There is a small wooden gag that goes with this instrument. Have a man stand on each side and hold a horn and one end of the gag, keeping the cow's head in line with the body; oil the probang and pass it through the hole in the gag, and on down until it reaches the obstacle; then carefully press on it until the obstruction is forced into the stomach.

If you cannot press the cause of the trouble down and the animal becomes badly bloated, tap her on the left side to let the gas out. A trachar and canula is best for this purpose, but in case of emergency a pocket knife may be used.

At the first appearance of choking and before an animal becomes bloated a gag, made of a round piece of wood about two inches in diameter should be run crosswise of her mouth and held there by a rope passing over her head and fastened to each end of the stick. This may be left in position for some time; it will usually prevent bloating and if the obstruction be a piece of turnip, mangle, apple, or potato it will usually soften and pass down into the stomach without any further treatment. However the oil

the paint-protected, weather-proof farm

The finest farm buildings soon get to look "dingy" if they are not kept painted.

Worse still, the omission of the Spring painting leaves them open to weather-attack and time's decay.

And—with materials so high as to make every building worth double today what it was worth in 1913—you are making a mistake if you let a building "go to seed."

Have your farm a "model" farm—have it fresh with paint—have it protected with a paint that affords real protection—

B-H "ENGLISH" PAINT 70% Pure White Lead (Brandram's Genuine B.B.) 30% Pure White Zinc 100% Pure Paint

If this paint were sold at a price half as high again as any other (which it isn't) it would still be the economical paint to use on your house. In sheer covering capacity it has no equal. A gallon of it goes so far that you'll buy less *of* it and yet do more *with* it. Paint with B-H "ENGLISH" PAINT this Spring—and your house is protected for years, where a coat of ordinary paint will last but a few months.

The difference lies in the above formula basis. What other paint is so correct in this respect that its makers guarantee it? What paint can a dealer furnish you that has anything like the quantity of white lead in it that has B-H "English".

This was the formula when lead was lower in price—this is the formula still; even though lead is extremely high in price. It HAS to be the B-H formula; because the guarantee that calls for it, is printed right on the B-H cans. We could not cheapen B-H "English" Paint even if we wanted to. So it's your safe paint as to quality, your sure paint as to covering capacity, your dependable paint as to durability. Find the B-H dealer in your town. He's the man to buy from.

Other B-H Products of Sterling Worth

For Interior Finishing

The name "China-Lac" suggests a china-like finish—and that is just the kind of finish you get from the use of China-Lac—the perfect varnish stain. Being transparent, it preserves the "grain-beauty" of the natural wood—at the same time giving splendid color effects. Easy to apply—not affected by either hot or cold water.

For Staining the Roof

Our "Anchor" Brand Shingle Stains are especially prepared to preserve wood from decay. Easy to apply—on rough surfaces they give a better effect than paint. Shingles may be dipped or brushed on. Come in 19 different colors.

For Plaster Ceilings and Walls

Use Fresconette—a flat tone oil paint. Fresconette comes in a variety of shades. It is absolutely sanitary, for it may be cleaned with a damp cloth or thoroughly washed at will.

For Varnishing a Floor

Our "FLOORLUSTRE" finishes a floor with a lustrous coating of the most durable enamel. Will stand hardest wear — will not show scratches. Excellent for interior floors. For Porch Floors, Ceilings, Posts, etc., where surface is exposed to the weather, use B-H Porch Floor Paints.

Imperial Barn Paint affords a convenient protection for barn and outbuildings, made of good material, covers well, dries hard, goes farthest and lasts longest.

BRANDRAM-HENDERSON LIMITED

MONTREAL HALIFAX ST JOHN TORONTO WINNIPEG CALGARY EDMONTON VANCOUVER

and manipulation on the outside of the neck will help the situation.

All stockmen should own and keep in a convenient place for cases of emergency like this, a trochar and canula and a probang. Two or three dollars will purchase the outfit and the expense is insignificant as compared with taking chances on losing an animal.

2. We know of no successful remedy for this trouble. In very bad cases a bistoury or small bladed knife may be used to cut the sphineter muscles that surround the opening and which holds the milk; but this invariably causes splattering and disagreeable milking and is most likely also to cause leaking of milk. Some have claimed that the teat-plug is a successful remedy, but these are apt to break the muscles and cause the same difficulty as cutting, and unless very carefully used it is likely to introduce germs and cause garget. You might try some veterinary supply house for an expansion implement which was advertised some years ago for this purpose, but which has not come into general use.

The best course is to beef a hard milker and turn her off. She should not be kept and used as a breeder as she is likely to transmit this defect to her offspring, even to son's daughters.

MEND THE GRAIN BAGS

It is quite a while yet until threshing time, but the time will roll around and catch you without your grain bags mended. Look them over now for you have more time now than you will have when the whistle blows next threshing time. Bring them in and go after them some stormy days. Take one of the poorer bags for patches. Lay a bag out flat on the floor or table and fit a patch to the hole. The patch should be about 2 inches larger than the hole and the corners should be slightly rounded. Lay another bag on top of this one and fit a patch to it, and so on until patches have been fitted on all of the bags needing them.

Mix up a smooth thick paste of flour and cold water. The paste must not be cooked. Take one of the bags to be patched and lay it on a smooth surface and with a paint brush paste the patch well. Also paste around the hole where it will be covered by the patch. Place the patch in position and touch lightly with a hot iron until the paste on the patch begins to cook, then rub down thoroughly. The hot iron cooks the paste and unites the patch and bag almost as one piece. By rounding the corners of the patch, they are not as liable to peel.

On a large hole it is best to place a piece of paper in the bag under the hole so the patch will not cook to the oppcsite side of the bag. It is not necessary to trim the holes, merely smooth out the ragged edges and they will be cooked to the patch evenly. I have bags patched in this manner that have stood for years. It is quicker, easier and just as good as the old methods and much cleaner, for where is there a farmer's wife who likes to take a bundle of dirty rags on her sewing machine or in her lap to patch? There is only one precaution needed. Bags patched in this way should not be allowed to become thoroughly soaked with rain for this may cause the patches to peel and loosen. I. H. W.

UNDERGROUND GROWTH OF PERENNIAL WEEDS MUST BE KILLED

Perennial weeds are the most difficult ones to hold in check or eradicate, according to Prof. W. W. Robbins, of the Colorado Agricultural College. Prof. Robbins says: "They live over and propagate themselves by means of underground growth. These underground parts grow readily, even though cut up into a number of pieces. In them is stored an abundance of reserve food, which is called upon to build new top growth. This food is made up in the leaves. Consequently, if the top growth is persistently kept down, the underground parts will at length be depleted of their reserve food, and starve. Practically all schemes of eradicating perennial weeds have one object in view and that is the starving of the underground growth. This object may be realized by fallowing, by the use of cultivated crops, by the use of smother crops, or by a combination of these."

UTILIZING INNER TUBES

The rubber from inner tubes can often be used to advantage about the farm. After a tube has passed its service on the car the rubber is still lively and if kept in a dark place where the air is not dry it will maintain its lively character for quite a long while.

If a piece is cut off the tube about one-half inch wide it makes an excellent band for putting around good tubes that are kept in the car, holding them in a convenient bundle. Two of these are needed for each tube.

The same kind of a band is also useful for putting round jars of fruit that are stored in cupboard shelves. The band of rubber keeps the glass sides from knocking together, preventing breakage of the jars.

The bands are also useful in holding documents, letters, etc. A bunch of the bands kept about the house may come useful in many ways.

If the tube is split lengthwise and narrow strips cut from it, the strips can be tacked about door and window casings to keep out the cold air in winter. A flat piece makes a good matting on the door step. In a thirty-four inch tube there are about eight square feet of rubber, so that a single tube will provide quite a great deal of rubber for many uses, and this rubber may come in handy in many ways about teh shop and house.

It is surprising that farmers will continue to plow and work around a stone or stump in the middle of a field, when it is so easy to remove such obstructions. Several instances of this kind have been noted only recently. A stick or two of dynamite properly placed would get ride of them in short order and the expense would be insignificant. Any hindrance to cultivation is expensive and at this time is decidedly unpatriotic.

Hippopotamus meat is said to be as good as pork, but the chances are that a lot of hippopotamus running about would muss up a back yard almost as much as chickens.—Marion (Ohio) Star.

What Will You Do For Help?

FARM help is scarce, but this condition can be relieved to a marked degree by using machines that accomplish more work in a given time with less man power.

Why should the farmer cling to horses—a slow, expensive means of power—when every other business is adopting the truck and thereby reducing the cost of hauling, speeding up deliveries, and saving for human needs the food that the horses would otherwise consume?

The motor driven truck can work constantly at maximum load under the burning summer sun, or in the coldest weather. Unlike the horse it needs no rests while working, it eats only while in actual use, and when the day's work is done it requires very little attention, and leaves you free for other "Chores" about the place. Then, it can be housed in one-quarter the space of the horses, wagon and harness it replaces.

It is a mistaken idea that a truck is useful only for driving upon paved roads. The Ford can be driven all over the farm, and used for hauling grain, potatoes, fruit, roots, fertilizer, wood, stock, milk or any other product. The speed it travels, the time it saves, and its low upkeep cost appeal very strongly to all users of the Ford Truck. If you need help, order your Ford One Ton Truck today.

Ford
THE UNIVERSAL CAR

One-Ton Truck	$750
Runabout - -	575
Touring - - -	595
Coupe - - -	770
Sedan - - -	970
Chassis - - -	535

F. O. B. Ford, Ont.

All prices subject to war tax charges, except trucks and chassis

Ford Motor Company of Canada,
Limited
Ford - - Ontario

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and breeders, Clydesdales, Dairy Shorthorns aed Border Leicester Sheep. Present offerings: 1 imported stallion, several young hulls, six to fifteen months old also a number of ewe and ram lambs for fall delivery.

G. C. Cossar, Prop. J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls, ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of hoth hreeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. S. Bloomfield Farm

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm
OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired hy Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lhs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest hull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Shorthorn Cattle !

High grade registered stock for sale.

J. E. HETHERINGTON,
CODY'S, - - - N. B.

GUERNSEY BULLS!

I offer for immediate sale, the Guernsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

FOR SALE

Best English Blue Orpingtons, beautiful rich blue birds, three dollars fifteen eggs ($3.00). Handsome Buttercups, prize matings, fine birds, $2.00 fifteen.

SARAH E. MOSES SMITH,
WOODWARDS COVE, - - N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

For Milk, Butter, Cheese, Veal, Holstein Cows stand supreme. If you try just one animal you will very soon want more. Write the

Holstein-Friesian Association
W. A. Clemons, Sec'y, St. George, Ont.

FOR SALE!

Present offering, one Bull Calf.

P. R. L. FAIRWEATHER,
Rothesay - - - N. B.

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

JERSEYS

Young Bull, solid color, dropped Sept. 1st, 17 Out of R.O.P. dam and hy a noted sire—combining the blood of Golden Lad, Tormentor and Flying Fox.

SHORTHORN:—

2 Young Bulls—One dropped Jan. 22, 1918, of the purely milking type, out of a great milking dam and hy a Champion sire in his class.

The other dropped April 2, 1918. Splendid specimens of beef type. Out of very large and blocky dam and heavy sire.

Both these calves are mostly red in color and in show condition.

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

Maple Green Farm Holsteins

Just now we are offering some fresh calved cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. hutter in 7 days.

Herd sires in service, "Maple Grove Mercena Mercedes," No. 11727, the sire of our 26.54 lh. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter hrother to our 25.05 lb. Jr. 3 year old.

For particulars write

R. L. HICKS
Dalhousie Jct., - - N. B.

ROSEWARNE
S.C. White Leghorns

I am now booking orders for baby chicks and hatching eggs from my well known bred-to-lay strain. Chicks will be very scarce this spring, and there will be a wild scramble later on for supplies, so get your order in early and pick your date.

My cockerels and pullets, out of same matings as day-old chicks were sold from last season, swept the board at Halifax.

Send for prices and mating list.

ERNEST CRAZE
Port Williams, - - N. S.

GLENRANE STOCK FAR

We are offering some very fine pure bred registered calves from 2 weeks to 8 months old. These calves are sired by "Homestead Hengerweld Rooker" ¾ brother to a 26 lb. jr. 3 yr. old. They will be sold reasonably if taken at once. We also have several litters of very fine York pigs.

ROBERT C. HICKS,
West Bathurst, - - - N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM

Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

BUTTER PARCHMENT
Maritime Farmer Office
Brown's Flats - N. B.

FOR SALE !

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st, 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown, with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lh. hull in Canada.

We have young hulls for sale whose two nearest dams (hoth Canadian champions) average as high as 35.62 lbs. hutter in seven days; another whose two nearest dams are hoth 100-lb. cows: and one ready for service from a 41-lb. sire and an 18,000-lh two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, Hammond River, N. B.
HOLSTEIN CATTLE AND YORKSHIRE SWINE
WM. S. HARDING, PROP.

We rae all sold out of last years crop of calves. We are now offering some young bull calves sired by Sir Foforit Schuiling. Also a fine litter of young Yorkshire pigs.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 113 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several hull calves, sired hy Prince Colantha's Canary B. whose four nearest dams average 32.84 lhs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple of hull calves fit to head the hest herds in the provinces. Come and see them. We would he pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lhs. hutter each in seven days. These cows have in turn been hred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkahle combination of breeding and will sell a helfer calf or two. Get your orders in quick, they won't he here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

Registered Jersey Heifer

We offer for sale the registered Jersey Heifer, "Pride of Rose Bank," 3 years old, milking sired hy Foxhall's St. John O'Dreamwold, whose dam gave over 10,000 lhs. milk in a year. Also Peerless Incuhator, Barred Rock and White Leghorn Cocks and Cockerels, which would exchange for Barred Rock Hens.

ORCHARD HILL FARM
Brown's Flats - N. B.

SPRINGVALE AYRSHIRES!

Our present offering is four bull calves eight to twelve months old all from heavy milking dams. One each from Rosalind and Nita, each a prize winner in the dairy tests Amherst F. S Show over all hreeds and grades.

Inspection invited.

FRED S. BLACK & SONS
AMHERST, N. S.

UNIVERSITY OF ILLINOIS
URBANA

Agricultural Reading Room
College of Agriculture
E. Davenport, Director
Urbana Ill.

The
MARITIME FARMER
AND CO-OPERATIVE DAIRYMAN

REGISTERED TRADEMARK

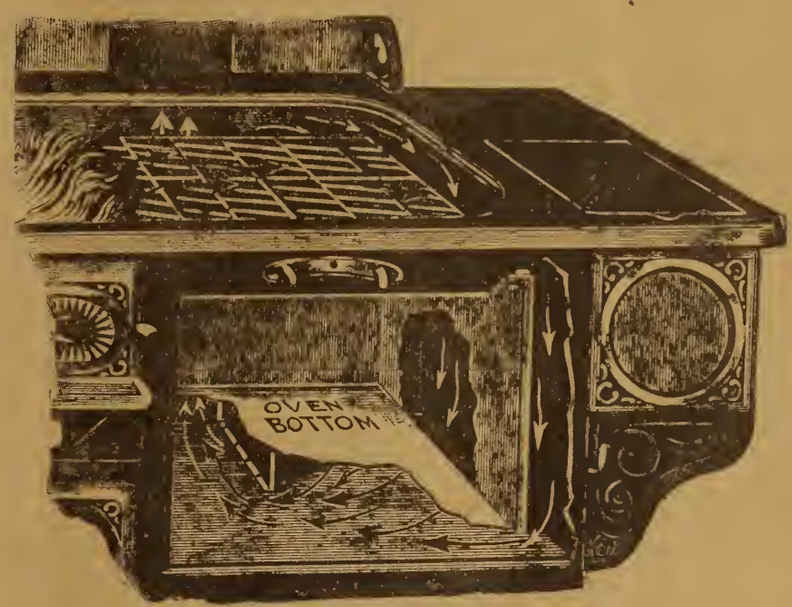
Published Twice-a-month in the Interests of the Farmers of the Maritime Provinces of Canada

Vol. 24 SUSSEX, N. B., AUGUST 27, 1918 No. 22

An Envelope of Heat

THE Kootenay oven is practically surrounded with heat—even, unvarying and steady.

Over the top of the oven and down the right hand side, the heat passes in a steady current, then underneath the oven till it strikes a guiding bar that sends it to the front, then straight across to the back.



The oven itself is constructed of heavily nickelled steel which absorbs and distributes the heat evenly and quickly to the interior.

Thus the oven is practically surrounded with an envelope of heat on five sides—left, top, right, bottom and back, and the outside is protected by a heavy steel door with air-tight joints so that not a particle of heat can escape.

The outside envelope of the heat flues, or the body of the range, is insulated with asbestos and protected with air-tight joints.

"Service in the Kitchen"—Booklet Free

This is only one of the many features of the Kootenay Range described in a beautiful little booklet, "Service in the Kitchen," which will be mailed free on request. It tells all a woman wants to know about a range before she buys it.

London
Toronto
Montreal
Winnipeg
Vancouver

McClary's
Kootenay
Range

St. John, N. B.
Hamilton
Calgary
Edmonton
Saskatoon

RENEWING THE STRAWBERRY BED

One question frequently asked is: "How lon may a bed of strawberries be profitably kept?" This question is incapable of a eneral answer. There are a number of factors which affect the answer, such as stand, freedom from disease, presence or absence of weeds or grass, variety and the relation of the bed to the rest of the farm operations. Commercial rowers usually fruit a bed for oneor two seasons and then plough it up, because usually by this time the grass and weeds have gotten such a hod that it is easier to plant a new bed than to clean up the old one. When the weeds are kept out, the fertility kept up and diseases do not appear a bed may be kept for several years, especially for home use. The size of the berries even under the most favorable conditions, will diminis after the second year. With varieties like Dunlap, Warfield and Bederwood, which produce lare crops of medium sized fruit, a bed would become commercially unprofitable sooner than other varieties which are not so inclined to overbear. Plants grown under hill culture aer frequently grown more than two years and those varieties adapted to hill culture are the ones which, under the matted row system, will prove best adapted to a longer fruiting period than two years.

In case it is decided to leave a bed for another season, it should be mowed after fruiting and the leaves either burned or raked off. Burning is risky and should be undertaken only when there is plenty of moisture in the ground and just enough mulch left to enable the fire to run. When this is done, a brisk wind will speed the fire quickly across the field without allowin git to linger long enough tocause injury. In case the leaves are not burned they should be raked off, together with the surplus mulch. After burning and raking, the middles are then plowed and worked down, the weeds and grass removed from the rows, fertilizer applied between the rows and the bed iven the same treatmnt as a newly set bed.

NEW CUCUMBER DISEASE

It is sometimes a matter of comment that we have so many more diseases and illnesses than we had a few years ago—as though the medical profession, instead of combating disease, was putting in its time searching through the human body for new illnesses and frailties.

But it is not among humans alone that science has been rooting up new diseases. Within recent years attention has been called to new potato diseases, and along come the scientific sharks and tell us of "Cucumber Mosaic," a disease somewhat similar to the potato mosaic, of which considerable has been heard during the past year.

A report from Ottawa Experimental Farm says that this disease of cucumbers is not well known in Ontario, but has of late been appearing more frequently. It is found that there are three types of the cucumber mosaic, one of which is very damaging. This is the White Pickle Mosaic, which greatly dwarfs the plants and causes the fruit to grow in a lumpy misshapen condition. The distortion in the fruit is due to irregular growth. Certain areas become sickly, assume a light yellow or nearly white color, and grow very poorly. The remainder of the surface is normal, retains its dark green color and grows much faster, thus producing distorted leaves or lumpy fruit.

In the other two types the leaves are the parts most affected. In one of these types the leaves are mottled with light, yellow green areas, and the plant is weakened and dwarfed, thus reducing the yield. The Mottled Leaf Mosaic is not so damaging as the White Pickle type. The third type is known as the Speckled Leaf Mosaic, and while the leaves become spotted with sickly areas, as the name indicates, this form of the disease is not considered to be very damaging.

Like other Mosaic diseases, these cucumber troubles are transmissible from one plant to another, though they are aparpently not due to any fungus or bacterial parasite. If the juice of a diseased plant be injected into a healthy plant, the disease will be produced and in the field transfer of this kind is thought to be brought about by means of sucking insects.

It has been found that the common wild cucumber also suffers from this trouble, and that insects will carry it from these wild plants to the cultivated crop in spring. It is not thought to be carried to any considerable extent in the seed.

In view of the transmissible nature of the disease, it is advisable to destroy and to burn up the dead vines in the fall.

McLAUGHLIN
Light Six
A Car that Fits Your Ideas of War Time Economy
LIGHTNESS in weight and good spring suspension insures maximum mileage from tires.
The valve-in-head motor means economy in gasoline.
These features, coupled with the low initial cost, makes the McLaughlin Light Six the best investment.
Buy your car before prices advance.
The McLAUGHLIN MOTOR CAR CO., Limited
OSHAWA, ONTARIO
Branches in Leading Cities
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MOTOR CARS
See the McLaughlin Line at the Nearest Dealer's Show-Rooms

GRADING AND PACKING VEGETABLES

No one can tell a rower whether a given practice will be profitable for him or not. However, one idea that is commonly held is usually wrong, that is, that it does not pay to grade and pack carefully when vegetables are cheap. In times of over-supply, it becomes a question whether produce can be moved at all or not. The grower with attractive goods is able to make sales when the neighbor leaves his crop in the field. It is true that it costs money to putproduce up in good shape, but this difficulty has been met by many growers by studying their operations with the idea of achieving greater efficiency. Many workers are exceptionally slow in bunching, tying, sorting and the like. Such workers should be taught to make better speed or should be put at some other task for which they are better adapted. Young people with nimble fingers can frequently be used to good advantage in this work. There are cases on record where tomatoes have been graded and packed in a packing shed at a lower cost than others would expend for packing directly into market baskets. In these operations piece work offrs a splendid incentive.

Perhaps it will be advisable for you to build a concrete celar for storage. The methods for this are quite simple, and products are accessible at all times. Be sure to make ample provision for ventilation at both top and bottom; otherwise you cannot secure circulation of air.

When putting up portiers or window shades do not nail them to the woodwork of the arch or window. The government needs all the metal it can get and nails should be conserved.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 23. SUSSEX, NEW BRUNSWICK, AUGUST 27, 1918. Number 22.

VALUE OF GOOD ROADS

They Constitute the Initial Step Towards Industrial Prosperity

By the roads of a country shall a country be known. The leading nations, at almost any period of the world's history, have been great road makers. It would indeed be ardous to find a subject more interesting, more timely or vital to Canada's interests than the subject of good roads. We all live on roads of some description and are living in a civilized influence. The better the system of roads in a country the higher the degree that influence manifests itself on the people. Were there no roads we would be back in the dark ages, when people lived in high distrust of one another.

Each country has its own particular road question to solve, but the country that grudges money for its roads, in the years to come, will find itself called upon to pay very heavily for its parsimony. When peace is declared there will be some millions of men with a fair understanding of the importance of good roads. The knowledge is being acquired through the progress of the war, where the roads are the great arteries along which the armies move, where breakdowns and obstructions mean shortage of food, shells, and support, while good roads with transports well organized enable hard-pressed armies to fall back with small loss, or a victorious army to press on with advantage. It was the good roads of France that was the chief medium in saving Paris in 1914, by the rapid transport of the armies by means of motor cars and trucks along the roads to the threatened sectors, and, again, the Germans' threat against Verdun was frustrated when the French organized a service of 4,000 motor vehicles, operating in both directions, night and day, without intermission, along a well-construeted loop line railway between both extended flanks of their army.

The men who have experience, each in his own way according to his need, the utility of the high-class roadway in war, are the men who will emphasize the importance of the roads in the life of a nation, and insist that the problem is one of national as against localized importance.

No Industrial Progress Where Mud Roads Prevail

Tbe same conditions that give facilities to the war worker will become necessary to the industrial worker in the peace time conflict on which future progress of Canada will depend. All industries of city and county progress in proportion to the case with which communication, exchange and transport of products are made. The making of a roadway that is fit for heavy motor traffic need not be resented b yany other industry on the ground that it is for the selfish interest of the motorist. The road will prove a boon to all industries for progress in every national and individual enterprise is bound up in the road question.

The value of any farm depends upon the distance it is from a town. In a large measure the distance to town depends upon the condition of the roads. It costs some farmers as much to get their farm products to town as it does to raise their crops. Few farmers figure on their expense, and wonder why they annually have not a better balance. Good roads make for speed and conservation, while bad roads are followed with isolation and decay.

You do not find a community of prosperous people with fine farms, good fences, up-to-date buildings, fine herds of cattle, teams and turnouts that are the pride of their owner, and withal surroundings that suggest refinements, culture and contentment, along a highway where the roads for many months of the year are impassable because of mud, ruts, and holes, that impede the progress and dampen the ardor of the traveller. No, these anomalies are not co-existent. The neglect of its roads has often enough been a mark of a nation's decay, and in this respect the parts of peace have proved more destructive than the ravages of war, for peace has destroyed what war has built.

Half Made Roads Bad Economy

In constructing new roads it is not necessary that all should be main roads. But what is necessary, however, is that all roads should be solidly built and surfaced to withstand the wear and tear of modern traffic, for poorly built roads are a source of expense to the community charged with their upkeep. This method of economy is expensive and falls heavily on the industries of a community, reacting on the prcie of all commodities that have to find their way over them to market.

Road interests are not inevitably opposed to railway and other transport interests. There is ample need for both, for, indeed, the transport of some classes of goods calls for road transport just in the same degree that carriage of other goods logically demands railway facilities. The railway, particularly in sparsely populated districts, may act as the main artery for goods and passenger transport—while the roads act as tributary feeders.

It is clear to every one, even those who have only a superficial knowledge of modern business conditions, and the elementary laws of economics, that any country possessed of good transport conditions can more readily attract capital for development than a country not so circumstanced. The many men now fighting in the war, will, on their return, have a broad outlook in regard to the value of roads, and these, using their influence, will be able to point out the obvious advantages of spending generously in the first place in order that suitable arteries of traffic may be constructed, and guard against the folly of building unsuitable roads that add so much to the retail cost of all transported goods, and are also more costly to maintain even in unsatisfactory condition.

It is turning the wheels back many years to introduce a discussion as to whether good roads are worth while. Without going into details the easiest way to answer this question, is to state that every civilized nation has sooner or later found that a system of permanent roads was absolutely essential to its proper development.

There is no country in Europe which has not an adequate system of national highways reinforced by a system of local highways in the smallets units of government.

Road Problem in its Right Perspective

In the near future the road problem as it is now known in Canada will be non-existent for the simple reason that new constructions, and even repairs to the highways will be carried out with a view to suiting the particular traffic they will be called on to carry. It is being freely stated that the road of teh future is to be a motor road pure and simple, but that opinion is going too far. There is no reasonable doubt about the utility of the motor driven vehicle and it is not now seriously disputed, that, for whatever purpose the roads may be used in the future they will, in any case, be suited to carrying the fast-moving, heavy-loaded vehicles.

Whatever the reason, whether pressure for good roads is brought to bear by farmers. cyclists, motorists or commercial interests. the fact ermains that the importance of suitable roads is now receiving recognition, and, although many questions of detail have still to be settled, most authorities, local and national, in practically every country, are beginning to view the road problem in its right perspective. Nine miles out of ten in Canada are just plain mud roads, earth roads, and clay roads. These are the roads that farmers depend upon to haul their products to the market and supplies to their farms. Nine farms out of ten are olcated on mud roads and it is no wonder that boys and girls leave home. Nine-tenths of the energy and

(Continued on page 736)

A MATTER OF DOLLARS AND CENTS

What It Costs With Horse and Wagon to Haul on Different Kinds of Roads

Tight surfaces laid on well-drained sites with good grades are the twin essentials of good roads. Proper planning is necessary to secure both. The comparative costs of hauling by horses and wagons over different road surfacings has been worked out carefully and in an article by Joseph H. Pratt, in the "Annals of the American Academy," 1910, is worth giving here.

Pro Rata Cost of Hauling One Ton a Distance of One Mile On Level Roads:

	Cents	
On asphalt	2.70	
Dry stone paving	5.33	(double)
Mud-covered stone paving	21.30	(8-fold)
Broken stone road in good order	8.00	(3-fold)
Good dry sand-clay road	8.00	(3-fold)
Broken stone with ruts and mud	26.00	(10-fold)
Earth—dry and hard	18.00	
Earth—with ruts and mud	39.00	
Loose gravel	(5) 51.60	
Dry sand	64.00	

On Level Grade, as a Standard, a Horse Pulls 1,000 pounds On a Rise of:

1 ft. in 100 (1%)	900 lbs.
1 ft, in 50 (2%)	810 lbs.
1 ft. in 25 (4%)	540 lbs.
1 ft. in 10 (10%)	250 lbs.

Important Meeting of United Farmers

Want a Farmer to Represent Carleton County--Appreciate Farm Help Leaves---Against Tax Exempt Victory Bonds

Woodstock, Aug. 22.—Over a hundred farmers met this afternoon in convention to hear the report of the local political leaders in reference to the election by acclamation of a candidate of the United Farmers' Association of New Brunswick to fill the vacancy now existing in Carleton County. The committe reported A. D. McCain as willing to agree to an independent candidate although he felt that he was not in a position to speak for the Liberal party. F. Smith and W. S. Sutton would be guided by the action of a Conservative convention. Some discussion took place over the advisability of placing a candidate in the field and it was the opinion of several speakers that it would be too soon for the organization to enter the political arena. One speaker said, "If we are beaten it wil ltake years to get over it." The matter was finally dealt with as in the resolution. The membership was stated to be 1,500 with stock sold to the amount of $6,000 for the co-operative branch of the association.

William Reid in the course of his speech said that many of those exempted for farm duties were not on farms. He knew of young men in Centreville exempted who are not farmers, who are roaming around the country. Strong exception was taken to the government putting a price on hay and compelling the farmer to sell to produce dealers. Mordon Sharp complained that every move for consideration made by the farmers was construed as unpatriotic.

Exception was also taken to the action of the military authorities in keeping returned men for home service. The best home service they could render would be on the farms.

Resolutions Passed

The following resolutions were passed:

We, the United Farmers of New Brunswick, wish to express our satisfaction with the present progress of the war in France, and feeling that the production of food is one of the most essential things in the prosecution of this war, and wish to put ourselves on record as being willing to do our utmost in the way of greater production ,and wish to express our appreciation of the leave granted to our soldiers in training in Canada, to assist in gathering the harvest, as without this help it would have been impossible to get the harvest before a good part of it would have been wasted; and we also wish to express our appreciation of the fact that the government has decided thatthere shall be no harvest excursions from the Maritime provinces to western Canada as weconsider thatall the available help will be needed in the maritime provinces the present season.

Whereas, it is reported the people of Canada will very soon be called upon toloan our government $12,000,000 more to carry on the war to the end of the year,

And, whereas this immense sum, added to our former public debts and probable future war loans as well, will saddle our patriotic people for many decades tocome with almost unbearable taxes, however equitable such taxes may be levied on our several industries an dour different classes of people,

And whereas, the greater part of the loan must necessarily come from our wealthy people and our millionaires, because farmers and laborerers have little or no ready cash for investment.

Therefore, resolved that this association of farmers unanimously protest against the exemption from taxes of any more war bonds that may be issued now or later on because such exemption from domestic taxation will result in largely relieving the most of our wealthiest people from their just share of making good the fearful cost of winning the war, while on the other hand such exemption of these vast sums of money, belonging to the rich must necessarily double the burdens which the farmers ad laborers must carry, driving more and more people off the land and further increasing the cost of living for the masses of the people.

We, the United Farmers of New Brunswick in convention assembled, feel that in the past the farmers of the province have not been consulted as they shuold be in regard to the carryrying on of the dept. of agriculture and whereas, we, the United Farmers more fully represent the agricultural interests than any other organization.

Therefore, be it resolved that in the future the United Farmers of New Brunswick should be consulted in matters affecting the farmers' interests.

Whereas in the past the government has obliged the farmer in disposing of his hay to pass it through the hands of produce dealers and consequently having to pay a large commission. Therefore, we put ourselves on record as being oposed to this procedure, and ask the government to buy direct from the farmers of the United Farmers' Co-operative Co. of New Brunswick.

That we memoralize the government that they shall not set a price on hay or any other farm product that would be below the cost of production, or below what the local market would afford us.

Moved by Joseph Palmer that we take a standing vote of this convention as to whether or not we will stand by a man brought out by the farmers. Passed unanimously.

We, the United Farmers of New Brunswick, wish to express our appreciation of the vote of the convention pledging ourselves to stand together for our own interests in the politics of the country, and feeling dissatisfied with the old political parties with regards to their attitude toward United Farmers of New Brunswick by electing by aclamation to fill the vacancy for Carleton county in the local assembly, but in view of the fact that this convention is not representative of the branches of Carleton county, we recommend that this matter be laid over for future consideration.

Interpretation and Limitation of Tuberculin Test

Prof. H. G. Hastings, Wisconsin College of Agriculture

An inquiry was recently received from one interested in the raising of dairy cattle, asking for the latest ideas as to the interpretation of the temperatures taken in making a tuberculin tests. The reply could only state that there are no "latest ideas" in regard to this point. The stockmen have been led to believe that the tuberculin test is a procedure which, when carried out by careful and experienced men, will detect all cases of tuberculosis in the herd and will not point a finger at any non-tubercular animal. In other words, by its aid at one stroke the diseased animals can be detected. Their removal from the herd, followed by the disinfection of the stable, should result in a tuberculosis-free herd. At least this has been the belief of many stockmen, a belief due to the statements that have been made by writers whose words carried conviction. Sometimes the effort to eradicate the disease from a herd in the manner indicated was successful and the results were according to the theoretical view. More frequently the results were not so successful and it required not one test, but many before the disease was overcome. Until very recently a large part of the practicing veterinarians have also held a similar view. They considered the test to have no limitations. Indeed, the writer has heard veterinarians state that they would guarantee to free a herd from the disease by one or two tests.

It is easy to create a wrong impression in the minds of the people and a most difficult task to overcome such an impression. It has long seemed to the writer that a recognition of what the tuberculin test can do and what it cannot do is something about which the cattle raiser should be well informed, for otherwise he will lose faith in the test and abandon it. It is certain that but rarely can a herd be freed from tuberculosis with one or two tests. It is likewise certain that it is the only agent by which the disease can be eliminated. If consistently and persistently used it will furnish a high degree of protection to the farmer.

Tht tissues of a tubercular animal are sensitive to the products formed by the tubercule bacillus. These products are contained in the tuberculin. When the tuberculin is injected beneath the skin, a fever results in the case of a tubercular animal; when the tuberculni is dropped into the eye of a diseased animal, inflammation follows; and if injected into the skin, a swelling is produced in the case of a tubercular animal. The tissues of a healthy cow are not sensitive to the products of the organism and so no effect follows their introduction. Nature does not provide uniformity in form or function. When a series of tubercular animals are injected with tuberculin subcutaneously, in most of them a marked fever results; in others the fever is so slight that one cannot be certain whether it is actually the result of the tuberculin or a normal fluctuation of temperature. In other words, the temperature increase in a diseased animal, due to tuberculin, may range from 0° to 5° or 6°. Somewhere an arbitrary line must be drawn. The animals on one side must be classed as reactors, those on the other side as non-reactors, or better, three groups of animals will result; those concerning which there is no question as to their having given a positive reaction, those which are classed as having given a negative reaction and a questionable group.

In a recent book on bovine tuberculosis, Dr. DeVine of New York, gives the following interesting results of a study of the temperature records and the post-mortem examination of 2,000 tubercular animals:

Comparative Percentages of Different Temperature Readings

Temperature Degrees	Generalized Tuberculosis	Localized Tuberculosis
102-103	1	1
103-104	5	6
104-105	19	21
105-106	75	72

It is frequently the practice not to class a reaction as positive unless the temperature reaches 104°. If that rule had been strictly applied in this case, from 6 to 7 per cent. of the diseased animals would have been left in the herd. Too high a temperature standard will leave some tubercular animals in the herd; too low a standard will result in the removal of healthy animals. The owner must decide which he considers the lesser of the two evils.

It is true that in certain stages of the disease the tendency to give a marked reaction is less than during other stages. As for example, during the incubation stage a reaction does not occur, nor does it occur during the dormant stage which is so frequently met in cattle. Taking in all sources of error, it does not seem possible to detect over 85 per cent. of the diseased animals at any one test. If for, example, we have 100 diseased cattle in a herd of 300, and a test enables us to remove 85 of them, we now have 200 healthy cattle and 15 tubercular animals in the herd. A second test detects 12 of the 15, a third test 2 of the 3, so now our herd consists of 200 healthy animals and one tubercular. This is an illustration of what is likely to happen if the disease does not spread between the tests. If an open case is left in the herd, the disease of course will spread. The idea the writer wishes to convey is that by the persistent use of the test, tuberculosis can be so reduced in a herd that it will cause little loss and usually absolute eliminations can be affected. The test will likewise protect the herd from the introduction of the disease in animals purchased, not absolutely, but very effectively.

8here is a tendency to class any deviation from what normally occurs in a tubercular animal as a questionable reaction and the owner is advised to keep th eanimal for a retest. For example, the fever may be more prolonged than is usually the case. Such a test was recently brought to the writer's attention. The fever due to the tuberculin appeared at about the normal time but instead of the temperature falling within three or four hours, it remained high until the twenty-secand hour after the injection. This led the veterinarian to recommend that the animal be kept for a retest. The owner had had no reacting animals in the herd for five years and considered it wise to take no chances. The animal was removed and slaughtered. The examination revealed tubercules of large size in the lungs and adjacent glands. If the animal had been left in the herd she might not have reacted to the retest and before another annual test was made the disease might have spread to other members of the herd.

The points that need to be emphasized are: first, that the tuberculin test has many limitations that must be taken into account in its practical application; second, that it is the only agent by which we can hope to combat the spread of this disease.

ANTHRAX

By Chas. H. Higgins, Pathologist, Ottawa

Anthrax is a highly infectious disease of animals that is contracted by the introduction of infected matter beneath the skin (blood or tissue from an animal dead of the disease, earth or any other material containing living anthrax organisms). So serious is the infection considered that it is mentioned as one of the scheduled diseases under "The Animals Contagious Diseases Act." It may affect all warm-blooded animals, and men frequently contract anthrax and die as a result of the infection.

Anthrax is most frequently seen in cattle, sheep, horses and hogs. It may occur at any season of the year, but especially in the summer or fall. Outbreaks are often associated with tanneries. Tanneries may have hides in process of manufacture from animals dead of the disease, and the anthrax organisms being removed in the "soak" water in turn infect the river or creek into which the "soak" water is discharged, as well as any low lying land which such water may overflow.

Cause

The anthrax organism was one of the first to receive attention, owing to the fact that its relatively large size permitted it to be seen in the blood with the microscopes used in the early sixties of the last century. Before this, while the disease was diagnosed, the germ causing it could not be identified, as the available microscopes did not magnify sufficiently. We owe Pasteur, the French chemist, whose researches on various phases of fermentation paved the way for a fuller understanding of diseases and their causes, a lasting debt of gratitude for giving us much information which today is common knowledge regarding anthrax.

Anthrax is caused by a rod-shaped bacillus, organism or germ, which multiplies with great rapidity in the blood. It has the power when drying of transorming itself into a resting stage or "spore" and this "spore" is capable of withstanding high temperatures and other untoward conditions which would destroy the life of the anthrax germ if it were not in the spore form. It is this resting or spore stage that makes it so difficult to effectively deal with an outbreak. Stables, yards and even the soil become impregnated with the virus or germ and their effective disinfection proves a somewhat difficult matter. In dealing with an outbreak the Department takes into consideration the various factors involved, treating each in such a manner as to safeguard the interests of all concerned.

Diagnosis

The diagnosis of anthrax is not a difficult matter to one trained in bacteriological science, as an examination of the blood of a dead animal almost instantly reveals the cause. To the lay person the sudden onset of the disease and the rapid cause, followed by death should arouse suspicion. When suspicious, the fear of anthrax should be communicated to the nearest veterinary inspector, whose training will permit him to accurately judge the nature of the malady from which the beast died. He will also determine the steps that must be taken to prevent its further spread. When anthrax is suspected, the skinning of the carcass must not be undertaken, as such a procedure liberates the germs which would otherwise be almost completely destroyed by its decomposition. Such carcases should be burned immediately, but when this is impossible, deep burial in quicklime must be practised.

Occurrence.

Outbreaks of anthrax have occurred in various parts of Canada, probably the most serious being the one at Swift Current, Sask., in 1901, when the sheep of the Canada Land and Ranch Company were very seriously affected. tA this time some thirty thousand sheep were exposed, of which three thousand died. Three human beings were affected, but fortunately as a result of prompt treatment recovered. Three horses died of the disease, but no cattle were affected. An area approximately seventy-five by twenty-five miles in this district along Swift Current Creek was infected. The outbreak was brought under control as a result of the sanitary precautions inaugurated by Dr. J. C. Hargrave, of Medicine Hat, and the writer. Vaccine was used as an additional precaution on a large number of the sheep. oN record of a recurrence has been repor ed in this locality since that time.

The diagnosis was confirmed by laboratory methods and animal inoculations. The source of the infection was not definitely established in this instance, but circumstancial evidence indicated that it was brought by sheep shearers direct from the Argentine Republic in South America.

In the fall of 1916 an outbreak occurred at Oshawa, Ontaria, where some twenty-five head of cattle and one horse died of the disease. The history here indicated that isolated deaths had been caused by the disease in previous years btu were incorrectly diagnosed, and at no time was anthrax suspected. A number of men contracted the disease and in March, 1917, one death in man was recorded, this being the first human case in this locality where the diagnosis was confirmed by microscopic examination. The banks of the creek into which the wash and other waste water from a tanenry were discharged were found to be nifected with anthrax.

Smal loutbreaks are frequently reported and are promptly dealt with by this Branch each year. It has been the policy for many years to recommend the vaccination of animals on infected premises. When this procedure has been effectively carried out untoward results from anthrax infection are rarely experienced.

Anthrax Vaccine

As we recommend the use of anthrax vaccine where anthrax has occurred, a short description will doubtless prove interesting.

Anthrax vaccines are attenuated or weakened cultures of the germ, causing anthrax (bacillus anthracis). The process of attenuating or reducing the strength of the germ is confined to the laboratory and cannot with safety be conducted elsewhere.

Anthrax vaccines properly used, afford protection, resistance or immunity to a subsequent artificial or natural anthrax infection.

To protect or immunize an animal against anthrax, two vaccines are required and protection or immunity is the result of the animal passing through two mild, properly graded attacks of the disease, which, as a rule, cause no inconvenience to the patient save a slight elevation in temperature. During these two mild attacks of the disease it is advisable to take particular care of the animals, avoiding exposure to inclement weather and extremes of heat or cold.

Vaccine used on an animal already affected with anthrax will not protect such an animal, nor will it prevent its death. The use of anthrax vaccine, during or immediately after the occurrence of an outbreak of anthrax, may be followed by death in some instances due to the stimulation of the anthrax germs already in the system of the animal. Such accidents cannot be prevented. In the use of anthrax vaccine the temperature of the animal to be vaccinated should be taken immediately before inoculating, and, in the event of the temperature being elevated, vaccination should be deferred until the temperature of the animal is again normal.

It is possible to establish immunity or resistance to anthrax very rapidly and also to remove some of the dangers attending vaccination through the use of a serum-vaccine. The serum-vaccine treatment of animals consists in the injection of a protective serum on one side of the neck of the animal to be treated, and immediately thereafter inject the vaccine on the other side of the neck. This establishes an effective protection or immunity in about ten days, overcomes the second handling of the animals to be protected, and the vaccine itself is safer to use. The protective serum if used during an outbreak on animals actually diseased, or such as have a high temperature, will assist them in overcoming the infection and may prevent deaths from anthrax.

In cases of human anthrax, experience has shown that this serum gives the greatest hope of success when used as soon as the infection is suspected. A number of recoveries have been attributed to the use of this serum.

All animals that are to be quartered on premises known to be infected with anthrax should be vaccinated at least once a year, otherwise there is danger of their contracting this disease.

The Hay Shortage

In some sections of the Maritime Provinces a sohrtage ofhay is reported. In consequence there will probably be a demand for hay this season. In order to supply members of agricultura societies at cost, the Maritime Farmer is endeavoring to arrange for the shipment of hay direct from the producer to the buyer. This will enable the farmer to get every cent possible out of his hay and will also assure the buyer of the closest possible price. The prices for hay should be fixed very shortly. If you require hay in your agricultural society, please advise the Maritime Farmer. We will arrange for shipments to you at the closest price available. We expect to give particulars of the Maritiem Province hay market in each issue of the Maritime Farmer. Watch our market page for prices.

Fall Pasture for Sheep and Swine

Sheep weaning time is one of the most critical periods in the development of the lambs. If well fed during this time they will not only mature earlier but will develop into larger animals. A convenient arrangement is to have a small enclosure of one or two acres, preferably near the farm buildings, for the lambs. The field may be sown to a cultivated grass, such as brome or western rye and the aftermath from the hay crop used for the pasture. In this case it will be necessary to have the hay taken off comparatively early in the season so that the aftermath will make good pasture. If, in addition, the lambs have access to a small lot of unharvested ripe oats they will make good progress.

If it can be arranged, a plot of rape will be found most useful in furnishing a large amount of succulent feed. The rape may either be pastured off or may be cut each day and fed the lambs. Both methods were tested out at the Scott Station last season. A plot of the Dwarf Essex rape in the dry season of 1917 gave in one cutting 7 tons 1,840 pounds per acre of green feed.

Swine.—For fall pigs, half-grown pigs and brood sows, some fall pasture is necessary for economical feeding. The rape will give an abundance of feed during the early autumn months. In light soils brome grass will help out later in the season, and early sown fall rye will provide pasture late in the autumn. The three kinds of crop might be in the one small field. A small patch of ripe oats and peas will give the young pigs a good start off for the cold weather. For this use, the oats should be of a short-strawed variety and ample seed should be used to secure a thick stand. The time for sowing the grain will depend on when the pasture is required; usually it can be sown late in May or early June to good advantage.—M. J. Tinline, Acting Superintendent, Experimental Station, Scott, Sask.

Ground Oil Cake Available

There is a quantity of ground oil cake (old process) which is avaibale at $59.00 per ton f. o. b. New York. An export license for this has been arranged for by the Live Stock Branch of the Department of Agriculture, Ottawa. The oil cake tests 34 per cent. protein. It is an excellent buy at the price and the Maritime Farmer will be pleased to handle orders for agricultural societies who wish a supply. There is also a quantity of ground linseed oil cake, about 3,000 tons, stored in Montreal, which is being offered at $62.00 per ton f. o. b. Montreal. The Maritime Farmer will place any order for this feed which may be forwarded. Act quickly if you want some. The feed situation is far from satisfactory and mill feeds will be very scarce this year.

Facts About Sheep

The world's sheep stock has decreased by 54,000,000 head since the war began.

The sheep supply of the United States has decreased by 3.000,000 head in the last five years.

Canada's sheep population has dwindled by over 200,000 head since 1914.

Australia's sheep supply has dwindled by several million head on account of drought.

Breeding ewes are not going to go lower; they are very liable to o higher in the next few months.

The exports of mutton from Canada during August, 1917, increased by nearly 50,000 pounds over the corresponding month last year.

The exports of meat from the United States for the year ended June 30. 1916, amounted to 1,339,193,000 pounds compared with a three-year ante bellum average of 493,848,000 pounds.

These exports went chiefly to the Allies, whose capital stock of animals has decreased by 33,000,000 head since the war started.

THE MARITIME FARMER.

And Co-operative Dairyman

Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I. Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

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AUGUST 27, 1918

DATES OF ISSUE.

September 10-24
Octoebr 8-22
November 5-19
December 3-17

THE RURAL ROAD CAN MAKE OR MAR A COMMUNITY

Unquestionably the railroad is necessary for long hauls of heavy and bulky commodities, such as coal, grain, lumber and similar materials, but the short haul or small shipments of odd products, for speed, for direct deliveries, good roads will give the motor truck a big advantage.

Good roads are the people's railroads. On them they may travel with their own conveyances at their own choice of speed, stopping where desired and at an expense to meet their purpose. Good roads meet their purpose. Good roads accommodate themselves to the tourist, the transient, the large shipper and the small. On the good road there is no restriction, no embargo or as little of the road as suits his purpose. As far as the road lies in his direction he follows it, and only regrets when he must leave it.

While we need both good roads and railroads, while each has its place in our economic life, there are recent developments which seem to favor the immediate construction of one or the other as well the intensive use of those already in use. Railroads are private, or at the most, semi-public enterprises, and they depend almost entirely on private capital for their construction, and on revenue for services performed for the money to operate. Good roads are always entirely a public affair and, with few exceptions, are free to all for travel and service except each must furnish his own means of locomotion and power, and they must be maintained by some form of general public taxation or special assessment.

Railroads, being under one general head, must move systematically and on a definite schedule. Good roads, on the other hand, permit an almost unlimited traffic, each unit travelling at its own speed, stopping when desired, and independent of the rest of the vehicles on the highway. Railroads require terminals, switch yards, sidetracks, etc. Good roads can deliver their goods anywhere in the cities through which they pass or with which they connect. The terminals, as such, is almost unnecessary, as shipments by trucks are usually delivered direct to the consignee. Granted that large concerns already have rail facilities in their plants or yards, there is usually some delay in placing cars where they may be unloaded direct into the warehouse or factory. A rail transfer requires the united efforts of several trainmen, engineer, fireman, conductor, brakeman and the office force of agent despatcher, etc. Good roads operation requires a truck driver with no need of special instruction except as to destination.

Operation of the railroad requires a force of train despatchers, operators, switchmen, etc., beside the numerous other officials. Road traffic requires none of this as in only our largest cities does the traffic become heavy enough to require more than a "traffic cop" at the busy intersections. Confusion of orders on a railroad usually results in a train wreck and a blocking of traffic and travel for hours or perhaps days. A breakdown of a truck results in only one truck being delayed until it can be repaired or its load transferred to another. Railroads require an expensive right of way, which must often be purchased at great cost, and maintained. Good roads follow the established roads, and can be adapted to local conitions. Railroads must be built at a very low grade, while good roads can be built on relatively steep grades, or reloaded as desired. Traffic on a railroad is seriously interfered with when changes are being made, while with good roads a detour may add a little to the time required but will not otherwise greatly dealy or inconvenience the traffic.

New centres of population will require railroads as well as good roads. New factories and industrial plants will require sidetracks and switches. Communities will require terminal facilities. Every railroad built will mean miles of good roads leading to it, and every mile of railroad or good road will mean further development of the district through which it passes. It will mean higher prices to those who sell, yet lower prices to those who buy, through bringing producer and consumer nearer together. It will mean marketing the produce which now goes to waste, and giving full employment to those who are idle part of the time.

MEN MUST BE BRED FIRST

Two distinct lines of breeding and fitting are required for every successful stock farm—with a third one as subsidiary. In the first place a man must be born and developed into such perfection as to work harmoniously with nature and perfect the skill which wil produce the perfect animal. Secondly, the animal must be bred with careful consideration of his ancestry, and blood lines combined to bring together the ancestry of a splendid line of forbears, and perfect the past work in the newest creation. Then, finally, subsidiary to this is the necessity for developing the best possibilities of the farm on which the animals are reared.

In the first place, we have our definite standards for men. No amount of feeding and fitting in a physical sense will make an oustanding man—and the question of heredity probably plays a smaller part in the result than is the case with cattle. The fitting in the case of a breeder lies in his education and experience—a fitting of the brain, and while it is a common saying, and a very true one, that a successful stock man is born and not made, it is equally true that any man, regardless of heredity, will be useless as a stock breeder without a course of training.

The education of a stock breeder is a comprehensive one. It starts with the public school education, and branches out at once into the rudiments of cleaning the stable and feeding the stock. Later it embraces a study of the conformation of the animals, and finally a close study of pedigrees and blood lines—the keystone of all of which is a keen eye for the fine points of an animal.

Having the trained man, the next consideration is the breeding of the stock itself. The breeder must start with the best material at hand, and from that point moves on into a new world of experiment and surprise. He sees in his mind's eye the ideal for which he is working, and he sees in his own herd the failures to come up to this ideal. Therefore, with a carefully balanced study of pedigree and type he brings new blood into his herd, and carefully notes the result in the offspring. There is no rule by which the results may be forecasted. The vast mystery of breeding lies in the impossibility of knowing what the result will be—and it often takes years to bring it out.

Breeders have risen in the breeding world to a considerable prominence, and have fallen out of sight just as quickly, because they were slaves to pedigree. A pedigree is only a piece of paper; it only represents past achievements by perhaps leading breeders—but it is no guarantee of the future. The crossing of strains, so absolutely essential to development, is a delicate and an uncertain affair, the results of which can only be learned by experience.

And then, the third side of the breeding triangle is the farm on which operations are carried on. On the farm are produced most of the feeds, and the character of the farm more or less dictates the character of the feeds on which the herds exist.

Certain soils are often deficient in phosphates that the animals produded on those farms require that element in some other form, and chewed up boards to secure it. This is a clear instance of a truth that is not always so clear. The more fertile, and better balanced the condition of the farm, the greater are the prospects for success in breeding operations; and, furthermore, the physical condition of the farm must be suitable or disease and sickness will run through the stock.

"NEVER BELONGED TO ANYTHING"

Such was the reply given by a well-to-do Manitboa farmer the other day to a friend who invited him to become a member of an association. He believed in the simple life. Quietly industrious, living within his sphere, minding his own business, he had been in his own estimation successful and saw no need of joining an association when in the past he had "never belonged to anything."

But what a narrow unsatisfying life he had lived. The great currents of world thought that had refreshed the souls of other men had flowed by while he was breaking and sowing and reaping. His life had closed him out. The generous enthusiasm of those who labor for redress of wrongs and the amelioration of the conditions of life he had never felt. The splendid human fellowship of those who link hands with others for the realization of noble ideals he had never shared.

* * *

There is a big revival in the sheep industry all over the Maritime Provinces. The continental prevalence of high wool, mutton and lamb values has placed the sheep business in a new light. The result will be that this phase of animal husbandry will contribute materially to Canada's food and clothing supply. It will also add stability to our systems of farming and play an important part in the more complete utilization of our agricultural resources.

THE MENTAL PROCSESES OF A STOCK JUDGE

As the season for Fall Fairs is near at hand our readers who will enter stock in the various competitions will be interested and should for the following qualifications in the men who will be responsible for the placing of awards.

Discriminating breeding involves, among other things, careful selection of the animals to be bred. This selection implies that the judge has a mental picture of the animal he wants, knows the limitations of the stock with which he deals, is able accurately to compare actual with ideal characteristics and to decide which combination of characteristics is most in harmony with the ideal. Or, since no animal is perfect, he must decide which combination of defects detracts least from the sum total of ideal qualities.

Judging should be conducted as to render itself a factor in increasing the usefulness of domesticated animals. Because some farmers have not seen how stock judging can be a distinct asset, and because some judges have disregarded the practical place of stock judging in the development of agriculture there has grown up a lack of harmony between the farmers and the judge, resulting in a variation in the types of animals considered ideal by the farmer and as approaching ideal by the judge. The discord is to be regretted. Farmers can improve their stock by introducing into their herds the blood of animals judged by experts to be good breeding stock, and by making use of the facts demonstrated in the breeding of the selected animals. On the other hand the judge should keep in touch with the commercial side of stock-raising.

The best judges are prophets. Looking back from the present, we would say that he was the best judge seventy-five years ago who selected as the finest animals, not those which would have taken championships had they been shown today, but rather those which were a marked advance over the stock of that day toward what is considered best today. Probably no judge of that day pictured such animals as are winning today, but the best judges and the best progressive breeders certainly were looking into the future when they selected the foundation stock of their herds. The great judges of the past have been leaders in the breeding ofanimals. And the best judge of today is a leader also, not a dictator nor a blind follower of fashion's decrees—an idealist, but not a mere dreamer.

A good judge is both born and made. Love for all animals, keen preception of variations, ability to size up the whole animal as well as to criticize component parts must be ingrained qualities. These qualities are made more sensitive through proper training. The judge must be strong willed. He should have control over his temper and not too quick to take offense. A grudge against an exhibitor, or displeasure with an attendant does not alter the characteristics of the animal which the exhibitor or attendant is showing. The judge must be honest—honest with himself as well as with the animals and the exhibitors. His mind must work logically that he may accurately correlate the sense impressions which sight and touch impart. He must be able to carry his thoughts to a logical conclusion upon which his decision should rest. That decision once made, he should have the courage to defend and maintain it. In order to do this he must be capable of clearly and forcefully presenting the reasons for his convictions. Independence of judgment is an indispensable trait. The judge at a fair is as closely criticised as the animals in the ring and the best judge in show circles is he who keeps his poise in spite of contrary opinions, insinuations and the dictates of fashion.

A successful breeder, feeder, or exhibitor is a good judge in so far as his judgment is concerned, and if he be able to express his reasonings and is otherwise qualified, his services are more valuable than those of a less experienced man. Quite often, however, such a man is biased toward the breed or type with which he works, and his knowledge of the other breeds, while extensive, may be limited in comparison to his knowledge of his favorite breeds. The wider the judge's experience the more effective will be his services where small shows, where the judge makes the awards on several types of animals. The deeper and longer the experience with some particular breed the more valuable will be his judgment at large shows, where specialists are demanded.

The judge should show himself willing to explain and discuss not only disputed points but all other questions which his time allows him to answer. He should be familiar with the tricks of the showring and with the deceptions commonly resorted to in exhibiting animals at better than their best.

When sure that his senses have registered aright, the judge makes a preliminary decision, then challenges that decision to make sure of his choice, and finally, before announcing his placing, fortifies himself with arguments with which to defend his convictions. This done he pushes back his hat, leans back against the railing, or folds his arms and announces, "Gentlemen, I place the animals in this order because———"

It is not at the showring that the most important judgments are passed. The breeder of live stock in surveying some animals which may be of value in upbuilding his herd and the purchase of which he is contemplating is facing a greater problem than if those animals were being judged at a fair. It is because showring decisions are, or ought to be, guides in the selection of breeding stock that they are in themselves of economic value. Showring competition is, however, one of the greatest incentives toward better breeding and affords an event of common interest to all live stock enthusiasts.

The beginner, finding his judgment at variance with that of his instructor, is apt to get discouraged or obstinate and to dismiss the matter with some such philosophy as this: "Judging is only a matter of opinion. Everyone has a right to an opinion and one man's is as good as another's. I may be as much in the right as the next." But if the beginner attends any gathering where live stock is displayed and where a number of breeders or feeders are in discussion and there carries his own philosophy to a logical conclusion, he will be forced to admit that judging is more than a matter of opinion. He will find that there is a preponderance of opinion in favor of a few animals. That not all agree on one individual as the best is largely due to a difference in ideals. Now if one man's opinion is as good as another's and the great majority of opinion coincide, there must be reason behind the fact. And since the reasonings of the majority resulted in the same conclusion it is more than probable that the basis if their reasonings was the same.

The beginner's first task is to comprehend this basis. The basis is the correlation of form to function. The beginner should familiarize himself with the anatomy of domestic live stock and be able to naame the more prominent parts. To this end the scorecard is used. It divides the animal form into segments and assigns a value to each, sub-dividing each into component parts. In using the scorecard the ideal animal is the basis of comparison. The ideal must be kept clearly in mind—not only the ideal animal as a whole but the ideal characteristics of each part. The scorecard study is analytical in nature.

The point placing card advances the student a step further, in that several animals are compared, the basis still being the ideal. Point placing is still analytical rather than comparative. The animals studied should show marked contrast in form so that the student may fully appreciate the fact that animals do vary.

Analytical studies give way to competitive comparlson of animals. The basis of comparison is utility. Though the ideal must always be carried in mind as a reference, where the contestants approach equality as compared to the ideal the final judgment is reached by balancing one contestant against the other with respect to their suitability for a definite purpose.

Practice makes perfect. Conversation with breeds, feeders and other well-informed stockmen reveals what is being emphasized from the commercial standpoint. The study of pictures helps to fix in mind breed types and desirable or undesirable features, but actual obesrvation of living animals in competition is the greatest aid in developing sound judgment. Reading keeps the judge abreast of the times, but far-reaching benefits from stock judging arise from the judge's being a little ahead of the times.—R. R. Benson in Breeders' Gazette.

PRODUCING GREATEST FLOW OF MILK WITH LEAST POSSIBLE EXPENSE IN FEEDS

The whole subject of balancing and using rations for farm stock is one that the every day farmer knows is vitally connected with the profit or loss as shown on the balance sheet recording his anual business on the farm. The methods of rationing gathered from the experience or practises of some who show a measure of success, are as a rule the guide to the rank and file in farming communities in the art of feeding. The rough and ready balancing and feeding of rations must in almost every instance lead to waste in food, but it is only when feed prices have reached present high levels that the average farmer has been forced to seriously consider the subject. Tables of the composition and digestibilities of foods, as well as tables of standard rations, are not largely studied by farmers in general, but it is becoming of the utmost importance to the welfare of the industry that these vital details in farming business be studied and better known. The agricultral coleges and experimental farms are fulfilling a high place in agricultral economics, and their experience and research is showing that meantime the feeding of live stock is a science of greatest import to the profitable production of food, and therefore to the interest of farmers. To do things in a scientific way is only to do them in a common sense way, and common sense is a product of intelligent interest.

Another leading factor in feeding animals besides a balanced ration is the tact of observation which every feeder must cultivate to gain a knowledge of the individuality of each animal under his care.

Hay and Fodder

The only coarse fodders containing a sufficiently high proportion of protein for use alone, for satisfactory growth, or normal milk or meat production, or energy in horses, are the hays, made from pure clover or alfalfa, and only these when it is possible for the animals to consume enough of them. Meadow hay, in which clover is absent, has a very poor showing in protein, only about three pounds in every hundred weight of hay, clover and alfalfa showing in analysis, 10 and 11 pounds of digestible protein. Of the straws, pea straw is the best. The farm grown grains, oats, barley, wheat, are all deficient in protein, though rich in carboydrates.

Ensilage, Roots and Grain

Corn ensilage and roots are excellent for supplying carbohydrates, but are deficient in protein, though if used with clover or alfalfa hay make well balanced rations for store cattle, dry cows and ewes. Oats is a well balanced food in themselves, but when added to poor hay and roots do very little to improve the balance. Barley and wheat are also low in protein, and unless balanced by cakes, gluten and oil meals are wasted when given with poor hay, roots or ensilage. Peas are, however, rich in protein, and can be used with meadow hay, roots or ensilage to make a well balanced ration, that will economically use up these low class forage crops.

Highly Concentrated Feeds

In buying concentrated feeds it is advisable for the buyer to get the correct analysis of digestible nutriments contained in the feed. A point worth noting in this connection, and one that shows the value of exactly knowing what is contained in the purchased feed, is, that a cake or meal containing 30 to 40 per cent. of protein will balance twice as much hay and other similar feeds, as a meal or cake containing only 15 or 20 per cent. protein. Half as much meal is only required to balance a given ration when the meal is of a higher percentage.

This is a point worth remembering, for after all the value of a concentrated food to the animal entirely depends on how it balances with the coarse foods given with it, so that the whole ration supplies the animal with the constituents it requires in the proportions in which they can be used to the best advantage. Such properly balanced feeding always gives the best results, and when it is compared with cost, is also most economical.

No farmer can afford to overlook this point in rationing when the price of feedstuffs are so high. The best results among farm stock cannot be achieved without them, and a waste of carbonhydrates in farm grown feeds is the result. Without some consideration to this subject and without some skill in this department, much loss will be occasioned in the effort to gain greater production, and much gain where judiciously and intelligently used.

Bulk in Feeds

A sucessful ration must contain not only sufficient nutriments to meet the needs of the animal, but it must be bulky enough to satisfy the appetite. If animals do not receive sufficient bulk to distend their digestive organs, they are not satisfied and will not do well. Bulk, therefore, has a commercial value. It would not pay to feed farm animals on concentrates alone, even if the required nutriments could be supplied cheapest in that form.

Assuming that the same principle holds good in human nutrition, this shatters the theory some persons indulge in, that ultimately a person can carry a full meal in a small capsule in his vest pocket. If it were possible to pack enough nutriments into a small capsule to last from one time to another, a person would still feel hollow after eating it, and would long for something to fill up on. Very concentrated foods will not come into style until digestive organs have been reduced in size.

Rationing for Maximum Production

It is very difficult to give a fixed ration, as the individuality of the cow or other animals, is a factor in the reckoning, as well as the skill of the feeder in handling them. It is only possible to cite a ration in a general way, which under ordinary conditions should make good returns.

A mixture recommended and practiced by successful dairymen is made up as follows:—400 lbs. of a high carbohydrate concentrate as ground barely; 200 lbs. of ground oats or bran, 100 lbs. of high protein concentrate such as oil meal or cottonseed meal. Under practical conditions cows should get one pound of the mixture for every 3 lbs. of milk they give. This of course when the best quality of hay is given, and along with it ensilage at the rate of 30 lbs. per 1000 pounds live weight of the cow. The skill of the feeder is, however, shown in the amount of feed he can induce the animal to consume, make good use of, and still maintain the herd in good health.

HORTICULTURE

SEED PRODUCTION IN APPLES

Introduction

The study of seed production in apples reported in this article grew out of observations indicating an apparent direct relation between numbers of seeds and size of fruit. The examination or large numbers of apples shows that the range in the seed production of individual apples is from 0 to 27—from no seeds to more than two and one half times the normal number—and that as a rule large apples produce more seeds than do small apples.

Seed production is the direct result of fertilization, and full fertilization depends upon bringing together varieties that flower together and that are congenal in all respects. This suggests the possibilitw of associating varieties in orchards in such manner as to approximate the maximum of seed production and thus secure that increase in size of fruit which would mean greater production. Valuable scientific as well as economic results would attend the successful development of such a system of association of vareities, but the immediate attainment of results that seem possible is not expected, for there is much yet to be learned both as to seed production and as to the affinities of standard orchard varieties.

Seed Production Records

As a basis from which to judge the performance of apples and crabs in seed production, records were taken from 28,054 individual apples. Thirty-two orchard varieties were represent-by 21,412 fruits, and twenty-five species and varieties of the genus **Malus** were represented by 6,642 fruits. This latter is strcitly crab group; noie of the species or varieties have any economic value other than as ornamentals. Most of them approximate the wild oriinals. The fruits of all but two of the orchard varieties were divided, on the basis of size, into two groups, a group of large apples and a group of small apples, in order to determine the relation between size of fruit and seed production. Fruits of the crab varieties were so uniform in size that no division into size groups was attempted.

Records obtained from the fruits examined suport the view that fruits of orchard varieties develop seeds in greater numbers than do fruits of the crab-like forms of the genus **Malus.** Further, they show that, as between the size-groups, the groups of large apples produced more seeds than did the groups of small apples. The differences between these three classes are as follows:

1. Average seeds to the fruit for 12,912 apples of large size, representing thirty-two varieties, 8.27.

2. Average seeds to the fruit for 8,500 appls of small size, representing thirty varieties, 7.21.

3. Average seeds to the fruit for 6,642 apples, representing twenty-five crab-like forms of **Malus,** 4.22.

Orchard Production

Seed Production.—Some varieties tended to concentrate within the assumed normal af ten seeds to each fruit, as was the case with Arkansas lacks, Grimes, Fameuse, and Rome; others tended to scatter the production over a wide raneg, as 1 to 27 in Shockley, 3 to 21 in Rhenish May, and 3 to 19 i nWinter Rambo. Distribution of seed production in its relation to the full normal content of ten seeds to each fruit is of interest as showing the extent of departures from normal in both directions. Among the 12,912 apples of large size were 1,610, or 21.5 per cent. of the total, each having the normal of ten seeds; falling below the normal of ten in seed production were 8,913 apples, or 69 per cent.; and with seed production above normal were 2,839 apples, or 18.5 per cent. Of the 8,500 small apples, 1,020, or 12 per cent, had each the normal of ten seeds; 6,786 apples, or 79.84 per cent. , fell below the normal; and 694 aplpes, or 8.16 per cent, had numbers of seeds raning above ten.

Number and Distribution of Carpels

Among the apples examined, 789, or 3.68 per cent., were found to have numbers of carpels other than the normal of five. Increase in number was more frequent than diminution; 129 aples had les sthan five carpels and 660 had more than five.

Size of Fruit in Relation to the Per Centaeg of Ovules Developed Seeds

Record was made of contained ovules, and percentages of ovules developed as seeds were computed for fruits of both size-groups of twenty-one varieties. In all but three of the varieties the numbers of ovules present in the groups of large fruits were higher than in the groups of small fruits. The percentages of ovules that developed into plump seeds are, perhaps, the best gage of the relative seed-producing capabilities of the two size-groups. Of the twenty-one varieties under consideration, all but one had the higher percentages of seeds developed in the groups of large apples. For all varieties the percentage of ovules developed was 74.5 for large fruits and 67.36 for small fruits.

Crab-like forms of the Genus Malus

The fruiting forms of the genus Malus included in the record of seed production number twenty-five. The aggregate of fruits examined was 6,642 varying for the different lots from 22 for Malus fusca to 1,200 for Malus Ringo sublobata. M. fusca was the only form represented by less than 100 fruits. The average weight for all fruits was 9.96 grams; five of the forms had fruits which averaged less than one gram in weight, and four, besides the two grams Hyslop and Soulard, had fruits that averaged above 10 grams.

Seed Production

Seed production ranged from an average of 13.2 seeds to each fruit for the 22 fruits of M. fusca to 7.8 seeds to each fruit for 100 fruits of M. Malus flore pleno. The general average for all fruits was 4.22 seeds to each fruit.

Number and Distribution of Carpels

There were wide differences among species in number and distribution of carpels; the range in numbers was from 2 to 12. Two fruits of M. Arnoldiana and one fruit of M. Sargenti had two carpels each. At the other extreme, two fruits of M. spectabilis had respectively eleven and twelve carpels each. Considering all fruits, 68.72 per cent. had the normal five carpels, 22.34 per cent. had numbres of carples less than five, and 8.94 per cent. had numbers of carpels in excess of the normal.

Number of Ovules

It developed in examining the fruits of the crab group that most species held to the rule of two ovules to each carpel with great regularity. In twelve of the forms there were no departures in either direction from the expected normal. The total of ovules above normal was 421 distributed in 158 fruits; of this number 300 were found in fruits of M. spectabilis and 81 in fruits of M. Malus flore pleno; the remainder was distributed among thirty-five fruits of seven species. Of all ovules found, 43.3 per cent. developed as seeds.

Comparing orchard varieties with crab-like forms of Malus, it is found that production of ovules in excess of normal is of much more common occurrence among orchard varieties than it is among crabs. Bringing together the percentages of ovules developing as seeds in the different groups, it is found that for large fruits of orchard varieties this percentage is 74.5, for small fruits of orchard varieties 67.36, and for crab-like fruits, 43.3.

Seed Production Under Controlled Pollination

Records of ovule and seed production for 3,861 fruits derived from controlled pollinations were tabulated. This tabulation does not indicate any marked superiority in seed production of fruits developed from flowers artificially pollinated over fruits from flowers open to natural agencies for transfer of pollen. Further studies are to be made, but the work thus far has given a rather definite impression that whether the pollination is open or controlled makes small difference in the percentaes of ovules that develop as viable seeds.

Conclusions

1. From the foregoing study of seed production in apples it appears that the average number of seeds to each fruit is almost twice as great for orchard varieties as for fruits from crab-like forms of Malus. Dividing fruits of orchard varieties into two groups on the basis of size, it further appears that large apples exceed small apples in seed production, altho the difference is not nearly so great as is the difference in seed content between orchard varieties and crab-like forms.

2. The range in average seed production as exhibited by different varieties is wide with both orchard varieties and crab-like forms.

3. Departures from the normal of five carpels to each fruit occurs with both orchard varieties and crab-like forms, but are much more frequent with crabs than with orchard fruits.

4. There are wide differences among individual varieties and species in seed-producing capacity, and the range in numbers of seeds in individual fruits is also wide.

5. The assumed normal of ten seeds to each fruit is likely to occur in a small percentage of orchard fruits but rarely occurs in crab-like forms.

6. Capacity to produce seeds appears as a varietal characteristic.

7. Parthenocarpic fruits occur in orchard varieties and in species of Malus, but not in very great numbers.

8. There is great regularity in the appearance of ovules in normal numbers, that is, two in each carpel. Few cases of suppression of ovules occur; numbers in excess of normal are more common among orchard varieties than among crabs.

9. Comparison of seed production in fruits developed from flowers open to pollination by insects and inf ruits from hand-pollinated flowers brings out onl ysmall differences; apparently seed production is not dependent upon the manner in which pollination is effected.

10. Considerable differences appear in seed production of individual fruits and of particular varieties, but averages of groups warrant the conclusion that the more highly developed orchard varieties exceed crabs in seed production and that, as between large and small fruits, large fruits produce the greater number of seeds.

(By Charles S. Crandall, Chief in Plant Breeding, University of Illinois)

STRAWBERRY DISEASES

In the following notes there are dealt with the five most prominent strawberry diseases in Ontario. It is hoped that the hints for control given may prve helpful to many whose plants are affected by one or more of these diseases.

Strawberry Mildew appears during June and early July. It is due to a fungus which grows mainly on the under sides of the leaves, and may be seen there as a white, webby or frost-like coating, usually rather scanty in amount. It causes the leaves to curl upwards, and a field which is badly affected has a peculiar whitish cast, due to this curling. Later on the lower surfaces of these curled-up leaves which are exposed to the sun are likely to turn purple or die at the edges, and when the leaves are badly attacked they may be totally destroyed. Besides reducing the feeding power of the leaves, a very seriou seffect of the Mildew is to allow the hot sun to penetrate through the leaves so that the fruit which ought to develop in a comparatively cool, shaded position is exposed to dry, hot air, which shrivels the fruit and prevents it from reaching normal size. The fungus also attacks and rots the fruit.

The Mildew is rather erratic in its occurrence. In some years it is almost absent and other years very prevalent over large areas. It develops most rapidly in warm and moist weather and will hardly spread at all when the weather is dry and hot.

Methods of Control

The most useful means of combating Strawberry Mildew is in the use of ordinary sulphur, which should be applied to the rows when the first symptoms of mildew noted. The sulphur may be applied either by using a dusting apapratus, by shaking through a fine sieve, or by putting it in a coarse cottonbag and pounding the bag as it is carried over the rows. Since it is the fumes of the sulphur, which are produced in the hot sun, which are effective against the disease, it is not necessary to cover every leaf with the dust, as has to be done in spraying. One feature of this treatment should be noted: If the sulphur is applied too close to picking times the fumes are apt to be rather irritating to the pickers on a hot day.

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Leaf Spot

The Leaf Spot disease is often very damaing to strawberry plantations where it is allowed to become jrevalent. As the name indicates, spots occur in the laf which are purple in color at first or with grey or white colored centres and a purple border as the spots get older.

Measures of control should begin when setting out the plants. Select healthy young plants and remove any spotted leaves from them. They should be sprayed with Bordeaux mixture 4-4-40 shortly after they are set out, and the leaves should be kept covered with the same mixture by two or more sprayings as needed throughout the growing season. In the second year they should be sprayed before the blossoms are out with the same material. After the fruit is picked another spraying of Bordeaux mixture may be given, or else the leaves should be all mowed after picking, and when dry burned as they lie.

Root Rot

During the last few years a great many strawberry plants have been lost and many plantations badly damaged by a peculiar "rot" of theroots, which is noticed during the spring and summer months. The palnts which are worst affected die early in the spring and others survive only till blossoming time or until fruits are being formed, when they gradually shrivel up and die. It is suspected that the injury is mainly due to winter, although there is some evidence for believeing that soil fungi may also play a part in aggravating this trouble.

It has been found that when young transplants are taken from a badly affected field early in the spring they are likely to die and result ina poor stand. It is, therefore, advisable wehn setting out a new plantation to examine theroots carefully. The roots may be browned on the outside, but if the small cord-like centre is still white and moist they are still uninjured, but if the centre cord-like part is also browned, then these roots are dead.

It is encouraing to note that several cases have been observed where plantations which were rather seriously affected one year, recovered and did well during the following year.

The only conrtol measure that seems necessary in thi scase is the protection of the plants from winter conditions. In either case, however, the remedy is a mulch of strawy manure or leaves applied in late fall.

Fruit Rots

The two most important rots of strawberry fruits which have been noted are the Dry Rot and Leak. Both of these occur in the strawberry regions of Ontario, in some cases to a considerable extent. The symptoms and method of control for both are clearly given in a reecnt article by Dr. C. L. Shear, of the Fruit Disease Investigtaions Branch at Washington. His statement is quoted as folows:

"The importance of the diseases of strawbery fruits is not generally recognized by growers because they rarely see the fruit atthe market. These diseases are, however, of great importance, since they injure the keeping quality of the fruit and thus reduce the returns to the grower, shipper and merchant, and also increase the cost of the berires to the consumer. No plant diseases cause more serious losses than those which decay the ripe fruits and thus destroy food which has been produced at great expense and labor. A careful study of the diseases of strawberry fruits carried on by the Office of Fruit Disease Investigations during the past three years has shown that the two most important diseases may be very largely reduced by means which are within the reach of every grower.

Dry Rot

"Dry Rot, caused by a grey mold (Botrytis sp), is a field trouble and is particularly common and destructive on the fields which are unusually wet tither from excessive rains or because readily recognized by thefact that the berries become rather firm and somewhat discolored. Berries of any age, whether green or ripe, may be attacked on th evines, and frequently the grey, powdery mold is seen growing on the outside of the berry. Not only berries, but at times leaf stems and blossoms, are attacked by this fungus.

"While the grey mold fungus grows rather slowly on ripe berries, and so is not of great importance after picking, it may become very conspicuous, due to its ability to grow at the temperature o fa refrigerator car. This characteristic enables it to develop on the top of the load, so that it is very noticeable when the car reaches the market and is being examined by buyers, a fact which frequently results in serious reduction in price.

"The only effective method of reducing the sprad of this disease in the field is by proper drainage. Dry Rot can be and should be largely eliminated as a cause of loss after pickin by proper sorting. Diseased berries should be thrown out by the pickers or packers.

Leak

"Leak, caused by the common black mold (Rhizepus nigricans), is by far the most common and most destructive diesase of ripe strawberry fruits. It is characterized by a rapid softening of the berry and the escape of much juice. This characteristic makes it particularly conscipuous on the market where boxes and even crates are badly strained, giving them a most unattractive oppearance. Moreover the fruit soon settles in the basket or box and is unsalable except at a grcat reduction.

"Study of this disease has shown that black mold can enter strawberries only when they are injured; thus one sure method of reducing loss is to handle berries carefully, so that they may be injured as little as possible. Black mold rows very slowly if at all below 50 degrees Fahrenheit, but very rapidly as the temperature rises above this point. Strawberries should therefore be kept as cool as possible.

"One simple method of keeping down the temperature of strawberries, and, one which is available to every grower is to pick the berries as early as possible in the day, before they have been warmed up by the sun's heat. This should be done even if the berries are wet, as experiments have shown that it is much better to pick berries cool and wet than to wait until they are dry and warm. In any case strawberries should be placed in the shade as soon as picked and protected from the sun by a light cloth while being hauled to the station. ark, heavy canvas or oilcloth retains the heat and hastens the decay of the fruit.

"In some sections of Florida certain rowers regularly practise washing the strawberries before they are picked. In case this method is followed strtwberries should be packed wet rather than allowed to dry, even in the shade, as experiments have shown conclusively that this drying greatly increases the amount of rot."

(W. A. McCubbin, Field Laboratory of Plant Pathology, St. Catherines, Ont. in Canadian Horticulturist.)

FALL CULTIVATION FOR THE ERADICATION OF WEEDS AND CONSERVATION OF MOISTURE

The eradication of weeds withour recourse to summerfallow or the use of hoed crops is the problem confronting the farmer in Central Alberta. In this region summerfallow is not practical, particularly in the areas of black loam soils, for the reason that too much nitrogen is liberated by the frequent cultivation with the result that the crops lodge, do not fill properly, nor mature as early as if less growth had been promoted. Hoed crops at the present time are not practical on account of the high cost of labour and the relatively large percentage of the farm which would annually have to be included in this class of crop.

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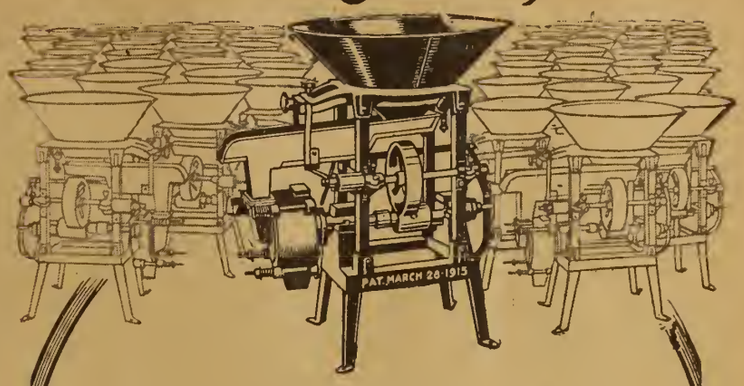

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Under these conditions, full cultivation of stubble land with the object of encouraging the germination of weed seeds offers the best opportunity of controlling and eliminating weeds. Beginning in 1908, the practice of discing immediately behind the binder has frequently been followed, and in consequence land which in 1907 produced thirty-three per cent of its total crop as weed seeds does not now produce more than five per cent. of weeds, while no season's crop has been lost in the interval through the use of the summerfallow. The advantage of discing immediately behind the binder as compared with discing after the grain has been shocked consists in the fact that all of the land can be disced, and the moment the field of grain is cut the discing is completed. Such discing has the dual effect of providing a shallow seed-bed in which weeds germinate freely, and of preventing the evaporation of moisture from the land newly exposed by the cutting of the crop. By ploughnig such land as soon as the grain is threshed and following with the packer, a second crop of weeds can be germinated in favourable seasons. The packer does the most effective work if used immediately after the plough, both as to its cultural effect on the land and in conserving moisture, and on heavy black loam soils will leave the land in good condition for germination of weed seeds.

No fall ploughing should be done to a depth less than six inches, since it should be remembered that fairly deep ploughing brings returns far beyond the extra cost of turning the additional depth.

Where the fall ploughing of sod is practised, it is wise to do this work as early in the season as possible, preferably the latter part of August or early in September. Six horses will handle a two-furrow, fourteen-inch gang plough in this class of land, and if the furrows are carefully turned to a depth of at least six inches, the land packed, double-disced and drag-harrowed, the packing at least being done daily and the other work within a week of the turning of the sod, this cultivation will be found equivalent to a partial summerfallow and quite sufficient to insure a maximum crop for the black loam areas.—G. H. Hutton, Superintendent, Experimental Station, Lacombe, Alta.

Cultivation of the soil in the autumn preparatory to spring planting is advantageous; it makes earlier planting possible, and leaves the soil in good condition for the roots of the young trees.

DAIRYING.

DAIRY CATTLE IN BIG DEMAND AT CLOSE OF WAR

One time, I remember, when I was a youngster at school, the teacher was telling the scholars about the different kinds of animals there were. It was a lesson in natural history, and she told about lions and tigers and other wonderful and strange creatures. After she had finished, she asked all of the pupils indidvidually what animal seemed to them the most wondeful. She received all sorts of names; most of them were names of strange and curious animals. There was one little fellow who had done a lot of listening, but had kept very still and had not talked about what he had heard. She asked him:

"William, what animal do you think the most wonderful?"

"The cow," he answered.

The way everyone laughed at this unexpected answer, made the poor boy hang his head in shame.

But today that same little boy, now grown to be a man, has shown that he was not very wrong when he stated that he thought that the cow was the most wonderful of all animals. He has one of the finest herds of purebred cattle, and his farm is one of the most fertile and while he has not the wealth of Rockfeller or Morgan he has independence and happiness which great wealth cannot always buy. And all of this has been acquired through the help of cows.

I have in mind two different persons who started farming about ten years ago. Each had about the same sort of a farm to start with. And each had the same amount of capital to begin with. In fact, they each started with the same. One of them stated that he was not going to be bothered with cows; they "tied one down too much." He made the principal method of his farming raising crops to sell. He planted large acreages to potatoes and used commercial fertilizers. At first he had more money than the other man. But by gradually taking out of the soil its fertility in the form of crops, and selling them, he is now unable to raise much on his farm. He is at present teaming for a living and agriculture is only a side line.

The other fellow began with a few cows. Made dairying the foundation of his farming. He gradually worked up his mowings and fields with the manure which his cows made. Little by little he added new stock to his herd and after getting a pure-bred bull he has raised a nice herd of grade cows. He has not sold off the fertility of his farm by selling grain or other crops or hay. These take away the fertility quickly. But by selling milk or butter there has been very little taken away from the farm. And, today this man has one of the best farms around and he and his family have some of the good things of life. He lets cows work for him and they have "made good."

Cows are the foundation of progressive agriculture. Successful agriculture is the foundation of a powerful and prosperous nation. In proportion that the live stock is sold off from any country, then poverty and failure takes place. On the other hand, wherever the farmers are successful, which is principally through live stock farming, there is found happiness and progress for everyone.

When a farmer has a stable full of nice cows, there he has beings working for him at all times. A cow is one of the busiest of animals. Night and day she is taking crude material in the form of hay and grain and silage and converting these into valuable food products such as milk and butter. She knows no holidays. At times she presents to her owner young which go to make up the herd of the future cows, etc. All of these are valuable.

Even when the cow gets too old for dairy purposes, she is sold for beef, as a final source of profit.

But, there is another thing which the farmer gets which is worth much. That is manure. That is made night and day and that is the foundation of the fertility of the farm. That is a fertilizer which is truly valuable. Manure makes the light soil firmer, makes the heavy soil more mellowi Puts humus into the soil and holds moisture in dry seasons, and in the early planting days retains the heat of the sun which makes the soil keep warmer for the early crops. And, unlike commercial fertilizers, it stays in the soil for a number of years.

When one sells from the farm hay, corn, wheat, etc., there is taken from the farm in fertilizing ingredients $7 to $10 worth for each ton sold. With dairy products there is only about $2 or less for each ton. Where one ton of milk is sold there are ten to twenty of the other products for the same amount of money received. If butter is sold there is only 50 cents worth of fertilizer taken from the farm for each ton. With this and milk a large per centage is taken from the air through the feed consumed. So, with dairying there is practically no loss when its products are sold, as the reverse is, with grain or hay and other crops.

While the exepnses are very great at present in keeping live stock the value of course, of cows, is fifty to seventy-five per cent. greater than it was a few years back. There are many who are getting discouraged and disposing of their stock. I feel that this of course, is unwise. In a few years, after the war is over there will be a big demand for dairy animals, especially of the better grades. All of the countries that have been in the path of the war will need new stock. Then will the farmer that has carried his cows through these hard times get his reward. Bseides, his farm will be up in fertility, where those that have not the stock will have gone backwards. The cow is going to save the farm. And the farm that is properous (through its dairying, etc.), will help to build up agriculture and the prosperity of the nation. With the help of the farmer, the cow will do her part to win the war and make everyone who has stood beside her, and carried the dairy through, successful.

Truly, when we realize the changes that have been made in the cow from the beginning, when she gave a few quarts of milk each day, until now, through the ages of time, she gives enormous quantities of milk and butter-fat; how she has been the foster-mother of the human race, and the foundation of our fertility, and incidentally prosperity; who will not agree with the little boy mentioned at the first of the this article who said that the cow is the most wonderful of all animals.—C. E. Richardson, in Ottawa Valley Journal.

SUMMER FEEDING OF MILCH COWS

The feeding of the milch cow should start when she is dry in order properly to prepare her for the milking period. The thin cow at calving is in poor condition to make milk profitably, nor can she produce the most rugged and healthy calf. Allow the cow four to ten weeks dry period before freshening. A first-class pasture, with or without grain, according to the needs of the cow, is the best conditioner for the dry cow in preparation for the milking period. A pound of grain during the dry period is worth at least three pounds of grain fed after the cow has freshened. On poor pastures feed the dry cow green feed or silage and a grain ration composed of equal parts of any of the two following meals, bran, ground oats, ground barley, ground screenings. To the thin, dry cow feed four to seven pounds daily, even though on good pasture. To the dry cow in good flesh and on good pasture no grain whatever is necessary.

Feeding at Calving.—Special care is required in the feeding of the cow at freshening, the procedure varying with the individuality of the animal. Be sure that the condition of the bowels is normal. Constipation at this time is apt to induce such trouble as milk fever, while the opposite condition is very weakening. After calving give a tepid drink containing a handful of linseed meal. Allow to rest quietly for twelve hours, after which give a warm bran mash with two bran mashes on the second day. Feed indoors for three days, giving a limited supply of green feed or good hay. Draw a little milk three to four times daily for the first three days. Do not milk dry until after the third day, as such procedure frequently induces milk fever. On the fourth day the cow may start on pasture, but it is usually advisable to supply a meal ration consisting of equal parts bran and oats in addition thereto. Unless pastures are good, this grain ration should be continued and even strengthened with some more concentrated meal.

Feeding the fresh cow.—The cow weighing 1,000 pounds requires the equivalent of 40 pounds of mixed pasture grass, or 10 pounds each of clover, hay and oat straw for the maintenance of her body alone. To this must be added the food to supply energy and the ingredients to manufacture milk, hence meagre feeding of milch cows means light returns, and liberal feeding is followed by heavy production and a lower cost per gallon.

As a rule, milk produced during the summer months with an abundance of, pasture is the cheapest production during the year, hence the proper care of pasture is most essential. Cattle should not be allowed to graze too early or so closely that the pasture is unable to withstand drought. With a shortage of permanent pasture, spring or fall-sown grains may be used as a supplement. Fall rye may be grazed both in the fall and spring. Such annual pastures as heavily seeded oats and barley or a mixture of oats, barley and wheat, will make excellent summer pasture. With present labour shortage it is probable that these annual pasture crops are more economicol than the growing of soiling crops to be cut and hauled to the stock on pasture or in stables. However, such soiling crops as peas and oats seeded at different dates, second cut clover, corn or fall turnips fed with tops as pulled, provide an excellent substitute for pasture. Silage made from corn or peas and oats, if available, is both a superior and a cheaper substitute for pasture.

Whatever the roughage may be, the majority of successful dairymen, as a rule, feed a limited grain ration during the summer months. A mixture of equal parts bran and oats or with the addition of 10 per cent ground peas or some similar concentrated meal will give excellent results.—E. S. Archibald, Dominion Animal Husbandman.

TREATMENT OF THE MILKER

The calf's udder needs to be looked after as soon as she is born. Her mate penned with her, may suck her little teats, and start secretions that will result in a spoiled udder for her, and bowel trouble for the "wind sucker," for even a kitten that sucks on something that yields no milk but only air, will become emaciated and perhaps die. Again, colds will often injure the the bag, lying on damp or dirty floors, bruises to teats, now or after she becomes a milch cow, and forcing with concentrated feeds cause garget, as do unclean hands and unsterilized tubes.

Don't buy a hard milker or short-teated cow, or raise a heifer with abnormaly smal teats or with too many or two few; and do the first milking of a heifer with her first calf yourself, as she can often be made a hard or easy milker by careless or careful teaching from the first.

Reach thumb and forefinger far up,

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where teat joins udder, and massage downward, pressing the milk down toward the end with a firm but caressing movement. then bring the whole hand to bear with that same massaging motion, to press the milk out. Pulling with a see-saw pumping motion is not skilful milking. The idea is to massage the milk out the whole milk factory with one long, continuous pressure. Milk briskly, but not hurriedly, and milk her dry at one sitting. Leaving a drop to be stripped out later teaches her the habit of holding up her milk for Act II.

Talk to calf, heifer, and bull—not letting talk take place of dehorning, however—accustom them to your presence and voice, and make friends with them, and see that hired man and dog are friendly if they stay on your premises. If any part of a cow is scratched, especially the udder, disinfect with a good germ-killer at once and keep clean.

ARE BUTTERMAKERS RESPONSIBLE FOR MOULDY BUTTER?

A great deal has been said by convention speakers regarding the prevention of mouldy butter.

It is not necessary to give the various methods that may be followed in treating the tubs and liners before they are used. The simplest one can be carried out in every factory by even an untrained maker.

1. Clean all tubs when brought into the churn room, using hot water and brush.
2. Place all tubs and covers in a tank of boiling water for a period of 10 minutes. Then fill tubs with cold water.
3. Place all liners and circles needed for the day's pack in boiling water for at least 10 minutes; then in saturated brine until used a few minutes later.
4. Before lining the tubs sprinkle salt on the inner surface before placing liner in position.
5. Sprinkle salt on top of the butter and moisten with clean water.
6. All unused tubs and liners must be again treated before being used the following day.
7. Thoroughly clean and whitewash the refrigeratir.
8. Allow a 60-pound tub of butter to stand in the factory refrigerator for 10 to 14 days; examine closely.
9. Pasteurize all of the cream before churning.
10. Consider mold as a dangerous enemy of the dairy industry.

This is a very serious question, and must receive the attention of every buttermaker of the country. The weather during the past few months has been very favorable for the growth of mold.—C. E. LEE.

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OINTMENTS AND SPRAYS TO KEEP FLIES AWAY FROM CATTLE

There is nothing that will keep flies entirely away from cattle but any one of the following mixtures will be found useful:

1 pound rancid lard, ½ pint of kerosene. Apply with hands or brush.

3 parts fish oil, 1 part kerosene. Aply with small spray pump.

2 parts cottonseed oil, or fish oil, 1 part pine tar. Apply with large paint brush.

2 ounces pennyroyal, 1 quart of olive or rape oil. Apply with brush.

In case of the horn fly, pine tar or crude oil may be plastered around the base of the horns or used somewhat diluted over the head and shoulders.—Geo. H. Glover, Colorado Agricultural College, Fort Collins, Colo.

NOVA SCOTIA CREAMERY BUTTER WINS AT WESTERN EXHIBITION

The Pictou County Dairy Company, Ltd., of Stelarton, N. S., made an exhibit of creamery butter at the Calgary Alberta, exhibition from June 28th to July 6th, and won up high in the prize list, their butter scoring 97.1 out of the possible 100 and the highest score made was 98 points The Company is receiving congratulations on the splendid showing made against the finest creameries in Western and middle Canada and also in view of the fact that Alberta for some time has been considered to be making the finest butter in Canada

This is another evidence that no finer butter can be made anywhere than in Nova Scotia.

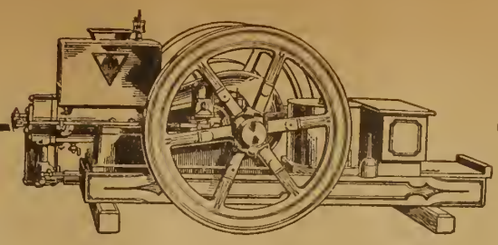
KEEPING BUTTERMILK SWEET

Some time ago a friend brought me a gallon of buttehmilk. At the time of churning she had put a quantity of water in the churn to assist in gathering the butter and, of course, this water remained with the buttermilk. After two or three days I went to get some of the buttermilk to use and found that the water had risen to the top and completely covered the milk. This gave me an idea, and after taking out what I wanted, I again covered the buttermilk with fresh water. Two or three days later I found the buttermilk as fresh and as sweet as at first. I continued to use a small quantity at a time, each time covering the buttermilk with water. I used the last of it after five weeks and found it still sweet. Since that time I have repeatedly tried the experiment and have always found the buttermilk sweet and good. Loppered milk may be preserved in the same way.

STRINGY MILK

Every year at this time we have a number of questions about stringy milk. People usually blame the cow for this condition of the milk, but in most cases the cow is not at all at fault. It is nearly always caused by a certain bacterium which when working in the milk gives it this ropy or stringy condition. Most people would feel insulted if it were suggested that the milk utensils were not entirely clean, yet usually this bacterium is found on the dishcloth, towel, or in the seams of the pails and pans. Even when these are carefully washed and scalded, the bacteria will be found somewhere along the line between the cow and the milk pan. The remedy for this condition is to boil thoroughly everything which touches the milk. Of course an exception would have to be made in the hands of the milker, but the clothes and the utensils should all be thoroughly boiled day after day for at least two weeks. We have many cases where readers reported this condition of the milk, and they could not believe that there was any trouble with the milk handling. They followed the plan of boiling thoroughly all the milk utensils for half an hour each day, and then put them out in the hot sun for an airing. When this was carefully followed out, and the stable cleaned up, the milk came back to a proper condition, and they had no further trouble with ropy or stringy milk. This is the remedy. It has to be applied in many cases, and always so far as we know with good results. Clean out the stable or stall where the cow stands, and give her a good washing or scrubbing. Keep the hands clean when milking, and boil the cloths and the tins thoroughly every day. That will get rid of the bacteria and end the trouble.

Henry Ward Beecher once said that the cow is the saint of the barnyard, and although she has few graceful lines and curves, a very awkward walk and an even worse "run," she is very charitable and self-sacrificing. And it is true that while the cow is not always a beautiful specimen of her race, yet she is much admired by all who appreciate the buttered side of their bread and the numerous other articles of food coming to us from the farm dairy. The small boy who hated to milk, when asked what he would do without cows, replied that we could use condensed milk. The homely dairy cow ought to be loved and well treated for the part she plays in feeding the world.



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OINTMENTS AND SPRAYS FOR FLIES ON CATTLE

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1 pound rancid lard; ½ pint kerosene. (Apply with the hands or brush.)

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In case of the horn fly, pine tar or crude oil may be plastered around the base of the horns or used somewhat diluted over the head and shoulders.—Geo. H. Glover, Colorado Agricultural College.

The farmer who feeds his crops to live stock and who carefully saves and returns the manure to the soil, retains on his farm a large portion of the fertility originally removed by the crops. He also has the chance of a double profit, receiving the value of his crops through the sale of live stock and live stock products, and at the same time retaining the crop constituents on the farm as fertilizer. This is the reason why live-stock farming pays better than crop farming in the long run. A live stock farm retains its fertility and productiveness.

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IN FEEDING CALVES METHODS WHICH WILL GIVE BEST RESULTS

Giving a calf an extra good start the first six months of its life and doing so cheaply, is the secret of successful and economical stock raising.

No matter how good the calf at birth, it will be handled at a loss, or more or less seriously handicapped for future usefulness and profit if not fed carefully and cheaply in its early days.

The present high prices of whole milk practically exclude this product being used to any extent in calf rearing, although it is absolutely necessary for the first three or four weeks if best results are to be obtained. To discover the best substitutes for whole milk and the best methods and practices in calf feeding, a large number of experiments have during the past three years been conducted on the Dominion Experimental Farms. A few deductions from these experiments are given herewith.

I. It is more profitable to breed and rear good young stock to maturity than to purchase the average cows for sale, which are usually the animals least profitable and desirable in the neighbor's herd.

II. The cheapest way of building up a good herd is to raise it. The feed costs of good rearing in Canada range from $16.00 to $24.30 for 6 months calves, $24.00 to $45.00 for 12 months calves and $37.00 to $74.30 for 24 months heifers, the variation depending on methods of feeding, feeds available and market values of these feeds.

III. Calves of poor type and breeding are not worth rearing, but good calves properly bred will be worth at least 30 per cent, and up to 100 per cent. more than their feed cost at two years of age.

IV. Calves of good size, strong constitution and large capacity will, on the same feed, make greater growth and better gains than small, weak, narrow individuals.

V. Good rearing of calves is most profitable as shown in such results as,

Earlier maturity in size.
Earlier maturity in profitable production.
Greater production throughout the whole life time.
More valuable and in greater demand at the highest price.
Healthier stock.
More durable animals.
Better able to consume most profitably all cheap farm grown roughages and convert these into milk.

VI. The calf reared on its dam costs 25 to 50% more than the pail-fed calf, and the more productive the cow the greater will be the charges against the calf.

VII. Pail-fed calves reared to 6 to 8 months largely on whole milk, make gains which cost $14.00 to $18.75 per cwt., which is several times the cost when a properly fed substitute for whole milk is used.

VIII. Skim-milk fed sweet and at a temperature of about 90 degrees Fahr. is the best single substitute for whole milk, and may reach a value of 70 cents per cwt. or more in feeding young calves. However, skim-milk may be improved by the addition of a good cream substitute such as flaxseed jelly, oatmeal or a well-balanced calf meal.

IX. Buttermilk, if fed uniformly as to acidity and temperature, may have a slightly greater value than skim-milk. Great caution must, however, be taken to start calves at a greater age and very gradually.

X. In feeding calves to 6 to 8 months of age on rations composed largely of skim-milk or buttermilk and a good cream substitute, gains may be made at a cost of feed amounting to from $2.00 to $7.15 per cwt., this amount varying with the character and price of meal and the ruggedness and thrift of the calves.

XI. If well started on mother's milk, calves may be well reared on calf meals without whole or skim-milk. However, greater care and attention must be paid to these calves, and even so, gains cost from $5.00 to $15.41 per cwt. or nearly double the cost where some skim-milk is used.

XII. There are many excellent calf meals on the market in Canada. The Canadian manufactured meals are as good as and generally decidedly superior to imported meals, due not only to the palatability of the ingredients and the chemical balance, but even more to freshness and freedom from mustiness.

Of the Canadian made calf meals used the three which in total gains have given excellent satisfaction are Royal Purple, Gold Dollar and Caldwell's.

Providing the necessary ingredients are available, it may often be more economical for the feeder to mix his own calf meals. If properly done, the resulting gains in weight of the calves may be nearly a sgreat, and often at a much reduced cost.

XIII. In order to rear the best and cheapest cows, all pail-fed calves should be taught to eat, at an early age, cheap and nutritious farm-grown roughages and grains. The best roughages are grass, fine alfalfa or clover hay, swede turnip, mangels and ensilage. Of the grains, oats and barley are unexcelled.

To Have Better Calves

1. Give suitable feeds and avoid overfeeding.

II. Feed regularly and carefully.

III. Keep calf pens clean and freshly bedded.

IV. Avoid in every possible way all such infectious diseases as scours, tuberculosis, black leg and abortion.

V. Destroy parasites such as worms, ringworm and lice.

STOCK FOR SHOWS SHOULD BE FITTED

There are not a few exhibitors of live stock at the animal fairs who send animals into the judging ring unprepared. Many an animal has fallen out of the prize list because of carelessness in fitting it for exhibition. This is an injustice to the animal, the breed, and the industry, and a distinct loss to the exhibitor. The showyard presents an opportunity for the public of studying the improvement of cattle, and it is an advertising medium of the first order to the breeder. The greatest gains to be had in showing stock are in an educational and advertising way. The money earned as prizes does not rank among the greatest benefits; as a matter of fact, few exhibitors win enough cash to offset what must be spent while animals are being prepared for showing. Skill in showing can only be obtained by observation and practice. The home is the training ground, and the intending exhibitor should have a periodical cattle show round the barns before starting out on the fair circuit. All animals should be taught to lead, and stand correctly. The majestic step in the former adds to the personality of the exhibit, which is the first characteristic that attracts the attention of judges. The last feat, that of standing correctly before the judge, is imperative and is the most difficult to attain. Stand the animal so that any weakness in conformation appears absent. Many animals show a weakness in the top line, and dip in the back while standing. This fault is generally apt to be aggravated at a fair, owing to the tiring effects of the journey and the lack of opportunity to get the accustomed rest while in the fair barns. The expert exhibitor is alive to the defect, and knows the way to eliminate it at the inspection. A touch with his cane on the front legs tells the trained animal where to place them, and the head is held at the correct elevation, and the picture of bovine symmetry is complete. The animal and herdsman seem to understand each other, and the spectators are led to believe that the animal itself is conscious that the supreme moment has come. Some animals are nervous, timid, and hard to handle before a crowd; therefore to gain their confidence they must be taught the way they should act. An animal that is a good actor will always capture the eye of the judge, and if it is a toss-up between two animals, which to place first, the better actor will win.

The first and most necessary act of preparedness is to have the animals in perfect health; without this no show bloom is possible. They must be fed and groomed regularly. In hot weather they should be kept in the barn all day and let out at night for exercise and for the fine grass they would get to put the finishing touches on condition. To get the hair in good condition use the currybomb or hard brush, then later put on finishing touches with a softer brush and plenty of elbow grease. Soften the skin by using woolen blankets; it will also make it pliable to the touch. The texture of the skin is a true indicator of the quality of the animal throughout, and if dirty, after a careless washing in which the soap has not been cleaned out, a silky skin of good quality will feel as hard as a tanned hide and the coat yellow and lifeless. If the animal is white or has white spots on the body, the white can be made more distinct by adding osme bluing to the rinsing water.

Have the hoofs in proper shape. Crooked, overlong or misshapen toes will detract very much from the appearance of the animal, denying it the opportunity to step out with a healthy, firm step. A rasp judiciously applied will remedy the appearance, and take off the superfluous hoof that is apt to grow more quickly from good condition, and lack of exercise on hard surfaces. If they require clipping with the hoof clipper, the operation must be done months before fair time, so that the natural shape will have returned.

For smoothing the horns use a soft file or emery cloth, and bring up the lustre of the horn with a liberal use of cloth saturated with linseed oil.—James Henry in Breeders Gazette.

FALL WORK WITH SHEEP

Fall is breeding time, and as the condition of the ewes and ram at this time has a very decided effect on the character of the lamb crop both as regards number and strength, so is it a time at which the foundations for the next year's success or failure are laid. A thin, unthrifty breeding flock means that the lambs will be few and weak; an over-fat, sluggish flock will bring the same result.

Weaning.—The lambs should be weaned about two months before the ewes are to be bred again. The lambs should be provided with separate pasture. Some heavy milking ewes need to be milked out by hand two or three times to prevent udder injury. Never allow the lamb to suck again after once being separated, as the milk is dangerous to him when it has not been drawn regularly.

Flushing.—This is a term applied to giving the ewes some extra feed just before breeding time. If they are gaining in condition and ar exceptionally thrifty at this time, they are more likely to conceive at the first service and to produce more and stronger lambs. Usually, on the Western farm, there is abundance of sheep feed at this time on the stubble fields. In cases where lack of fencing, late threshing or other causes make it impossible to allow the ewes a plentiful run of stubble fields.

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some supplementary pasture should be provided. In any case, some succulent pasture such as rape or clover aftermath will be very beneficial, as soft, succulent feed of this kind is more effective in flushing the ewes than the dry pickings of the stubble. Grain feeding is not usually necessary, but in rase of pasture shortage should be resorted to rather than let the ewes run down in condition.

The Ram.—The ram should be kept separate from the ewes from about September 1st until breeding time. He should be well fed during this time so that he starts the breeding season in good condition. He should not be loaded with too much fat so as to be sluggish, but should be in good, thrifty, moderately fat condition. A little grain feeding at this time in addition to pasture is advisable. A mixture of half bran and half whole oats, is very suitable for this purpose.

The best way to breed a flock of ewes is to keep the ram separate and allow him with the flock only for an hour or so each day during which time he is watched and allowed to breed each sheep only once and a record kept of each mating. However, with labour conditions as they are in the West this is practically never possible and teh ram must run with the flock. A mature ram may be allowed to run with thirty to thirty-five ewes, or a well developed lamb with twenty to twenty-five.

It is a good idea to paint the brisket of the ram with some coloring matter that will mark the ewe at each service. If the color is changed each three weeks, one can easily see how many ewes are returning.

The date at which ewes should be bred depends on the conditions under which they are to lamb in the spring. A ewe will lamb about five days short of five months from the date of breeding. Turning the ram loose about November 1st will thus bring the lamb crop in during the last few days of March and the month of April. This is a satisfactory time on the average farm where shelter can be provided in case of lambs cóming in bad weather. Normally, only shed shelter is necessary at this time. Where sheep must lamb in the open, breeding should not begin until December 1st.

Dipping.—While not quite so essential as spring dipping, a dipping in the fall is very beneficial to a flock. They may have only a few ticks on them but if these are allowed to multiply undisturbed, they will be very numerous and cause much discomfort to the sheep before the spring dipping time arrives. A good reliable prepared dip is the best to use; the sheep should be thoroughly immersed in the solution.

EUROPEAN LIVE STOCK BEING GREATLY REDUCED

The comparative losses of live stock by the warring and neutral nations of Europe and the general effect on their meat supply may be judged from figures just given out by the United States Food Administration.

As regards meat, the Central Powers were much better prepared for the war than the Allies. Although the Allies possessed a greater total number of meat animals, the Central Powers had forty-two per cent. more per capita. This advantage amounted to thirty-three animals of all classes per one hundred population.

Due apparently to acquisition of animals by conquest, Germany has not slaughtered her home supply of live stock as rapidly as otherwise would have been necessary. There is now a practical exhaustion of animals in Belgium, Serbia and Rumania as a result of invasion, according to information from very reliable sources. In total animals the Allies have decreased their herds and flocks 45,787,000 head while Germany has reduced hers about 18,000,000—only slightly more than a third as many. The figures include cattle, sheep and hogs. Neutral nations show a total net reduction amounting to 1,412,000 of these animals. The European loss thus exceeds 65,000,000 head without taking into consideration Austria, Turkey and Russia which would, undoubtedly, bring the total to over 100,000,000.

A somewhat clearer view of the European meat situation at present is secured by reducing the number of animals to the actual amount of dressed meat they will yield. Rating cattle as equivalent to 500 pounds of dressed meat a piece; sheep forty pounds, and hogs 150 pounds, it appears that the various countries have suffered losses in their total meat assets to the following extent:

Per cent. of Loss on Meat Basis	
Allies as a group	28.7
England	12.5
Belgium	82.0
France	21.4
Italy	17.8
Germany	36.3
European neutrals	0.9

Considering the poor condition of the animals still alive and the reported reduction in live weight, the possible meat resources of Europe are obviously still further reduced.

The total number of cattle, sheep and hogs now in the United States is about 187,000,000, according to best estimates, which makes a striking comparison with the European depletion of 100,000,000 animals. Briefly, it appears that Europe has already lost considerably over half as many meat animals as there are in the United States today.

HINTS FOR THE YOUNG LAMBS

When we wean our lambs the ewes are turned out on the poorest pasture we have, to dry up their milk. Following that they are allowed to run on ordinary pasture, says H. L. Wordwell, of New York. The Shropshire is an easy keeper. After they wean their lambs the ewes are given no grain of any kind to eat; and yet their condition is first-class. In this connection I want to give a few suggestions as to how a man raising sheep should handle his lambs after they are weaned. We all know that one of the greatest troubles with raising sheep is that many of the lambs die from worms. While the weather is cool, in May and June, and the pasture is fresh, the lambs will do well enough, running with their mothers in the pasture, providing you change the ewes and put them on different pasture about every two weeks.

If a man has three pastures and is raising cows also, he may run the cows on a pasture and every two weeks take them off and put them on a new pasture, following up with his lambs on the first pasture; and so on, letting the lambs and sheep follow the cows. By the time he has gone over the three he can rotate again in the same way. Now, when lambs are weaned in June or July, it is getting hot weather. Then is the time that the worms will bother the lambs. To provide against this trouble, plow up some ground early in the season and plant the land to rape. Plant it in rows with an ordinary seeder, and give it two or three cultivations. It will soon cover the ground, and when July 15 or August 1 comes, hurdle the lambs on this rape, giving them one row of the rape in the morning, a second in the middle of the day, and a third at night. If you have 75 to 80 lambs, a row 60 to 70 ft. long will be plenty. Then put some feeding troughs upon the rape ground which they have eaten off and give them about a handful, twice a day, of bran and oats, half and half, and add to this mixture about a fifth by weight of linseed cake, cracked pea size. You will be perfectly astonished how the lambs will feed up and grow under these conditions. It is very beneficial to have a pasture adjacent to the rape field, where they can run off and on during the day. The sheep is a dainty thing, also a great weed eliminator. This rape is as clean as the salad on your plate in your own home, hence the sheep will consume every bit of rape when hurdled on it, and like it, whereas if you turn them right on to the rape field they will muss it over and a large portion of it be wasted. One more thing I want to say about this method of feeding; the ground that is thus hurdled off is thus manured by the droppings of the sheep and is in excellent condition to raise a big crop of anything the next year. Last summer we had a piece of rape of about three acres, and from 75 to 100 lambs were hurdled on it from July 15 until November 9.

HEAT IN SOWS AFTER FORCED SERVICE

While employed as swine herdsman at the University of Illinois I had charge of a very large Berkshire sow which had not farrowed and so far as I know had not been in heat for about a year. I decided to put her in the breeding crate and give her a forced service. Within a very short time after that she came into a natural period of heat. The sow was then bred about the middle of the period, and from this service farrowed 13 fine pigs. She has been breeding ever since, so far as I know. I have only tried this once, but I believe is to be a reasonably sure remedy for sows. As to cows I cannot say.—W. H. Cain, Nelson Co., Va.

Just now there are many questions about the hard crust or growth on the legs and feet of chickens. It is known as "scaly leg" and is caused by a small mite which works in under the crust. Soak the feet and legs in warm water for five minutes and then smear the crusts with one part kerosene in two parts raw linseed oil or one part oil of caraway in four parts lard or vaseline.

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THE HORSE

THE HORSE COLLAR

No hores collar that is fastened at the top can ever be economical in harness up-keep, neither does it tend to be the most comfortable for the horses, or act as a safeguard against sore and bruised shoulders. The collar that is of the greatest utility to the work horse is the one that is firm, and no collar that fastens at the top and is unfastened every time it is used can remain a firm and fit article. Unfastening at the top slackens and damages the breast of the collar, and a slipping up and down movement is caused when the horse pulls. This invariably starts firing, blistering and open sores. The collar soon becomes broken into two halfs and is irreparable. At the price harness is now at and will likely reach before leather is placed at the disposal of peaceful enterprises, it is up to the farmer to exercise care how he uses the article on hand.

In the matter of reducing the cost of tear and wear in harness and horse, the collar that has no fastening buckle, either above or below, is the one that is the most economical for both the motive power of the horse and for the labor bill in harness. If the horse could express how he feels in his harness when doing his level best at pulling, he would make most comment on the collar.

How the Horse feels it.

Suppose anyone placed a rope over your own shoulder and told you to get along and pull with it as hard as you could, the chances are that you would re-arrange the rope yourself before you commenced to pull, or at least after you had gone on a little way you would have a desire to change it somewhat to fit some peculiarity in your make-up that was overlooked or unknown by the man who placed the rope over your shoulder. The horse has the same desire as you have to feel as comfortable as possible, but has no way of expressing himself and cannot readjust his collar.

It is this want of thought on the part of the horseman and the inability of the horse to fit the harness to his liking, that is the cause of all the horse shoulder sores and deterioration of motive power on the farm. When a collar is once firm and is a proved and secure good fit to the shape of the horse's neck, it is the duty of the horseman to keep it so. But it cannot be kept in firm and fit condition if it is unfastened every time it is taken off. By this operation it gets broken in texture at the breast, thus destroying the utility of the collar in a season or two, and widening it so that there is too much movement and free play on the shoulder, and consequent damage to that part of the horse's anatomy. To meet the bad effect of this process tightening of the fastening at the top is resorted to, but this method fails to meet the desired end as it does not relieve the animal at the part of the shoulder affected by the misfit.

It should be put on and off over the head, and a horse soon gets accustomed to the act and will assist to get it on. The writer never had any difficulty to train the horse to put on his own collar, when it was laid on the manger, in a way that the horse could get his head through. No heavy draft horse in Scotland is ever put to hard pulling with a collar that is fastened at the top with a buckle and strap. They find that the strap at the top allows he collar to give with pressure in pulling, and blistering and wither sores is the result. Every horse has his own collar and no changing around of collar is practised. All collars are made without any strap fastening, and have to be put on over the horse's head. They are firm and wear for many years without repair; the matter of repair in these days is worth more than passing consideration.

Taught the Vice of Balking

Many horses are taught the vice of balking through bad fitting collars; at breaking in as a rule, all horses behave well; it is in the subsequent "hitchings up" that vice apears. It is perhaps due partially to breeding, but in most cases it is due to the horse resenting to be worked with a shoulder that still feels the effect of his first attempt at pulling. It is he horse's only way of telling his driver that there is something wrong and that it hurts to pull. It is a serious matter in horse training to let a horse know that he cannot be made to pull, and nine cases of balking out of every ten are due to some ill-fitting adjustment. Overloading is a common error in horse breaking, but an empty wagon is an overload to a horse with sore shoulders, and balking is the lesson he learns from the experience.

It is the best class, the keen spirited thinking horse, that is taught the balking vice through ill fitting harness. A dullard horse may pull through with open sores and raw flesh next to the collar pad, but it is inhuman and reduces his value and utility. The fault of balking is generally blamed on the horse when it invariably is the lack of sympathy and consideration in the teamster. A slight soreness or bruising, that cannot be quickly detected, is enough to keep a keen spirited horse from doing his best, and it is the teamster's duty to be on the outlook for the first signs of resentment on the part of he horse, and rearrange the collar or any misfit in harness. No teamster should, at breaking in time or at any time, use horses as if they were inanimate and void of feeling.

With the firm collar that has no top fastening, and has to be put on over the head, a soft pad, made the shape of he collar at the neck top is the best arrangement when spring and summer work reduces the size and changes the shape of the neck. With a collar that fits the neck and a shoe that fits the hoof, every horse that is hitched up to work will express his gratitude in efficient work and increase the returns to the horse breeding industry by thousands of dollars.

Sweat pads are of no value to the utility of the horse and many times add only to his discomfort. A well-fitting collar requires no sweat pad, and to an ill-fitting one it only magnifies the trouble. Everyday at noon in warm weather the collar should be taken off, and set up to dry—face towards the sunshine—for a few minutes and when dry cleaned with curry comb and brush. Grooming the collar's facings is of equal importance to grooming the horse. If the collar is not kept clean, grooming the shoulder is at a discount in shoulder keeping. When the horse comes from work hot and sweating the shoulders should be bathed with cold water, in which there has been mixed a little common salt. No salt must, however, be used where there is a wound or broken skin. No work horse should have broken or bruised shoulder skin, and the teamster that allows the horse under his charge to become so affected, is not worth his salt to his employer, and is a blot on the hall mark of the horse breeding industry.

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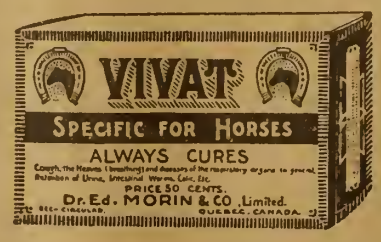

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days she could travel like a greyhound, but let her get too much hay or on a foggy day and she had heaves just fifty times worse than any horse livin'. And afraid of autos—the first one we met she reared and snorted, fell down, frothed at the mouth, bled at the nose and stiffened out on the ground like a dead horse, with the harness and shafts tangled about her so we had to cut part of the straps to get her loose. After a bit she came to and as soon as we got her hitched another auto dashed by and down she went again. I couldn't quit peddlin' milk to devote all my time to brinin' her to so I says: "Here goes. Somebody's goin' to get her."

I took her over to Mike Anderson's one afternoos when the weather was just right and she hadn't had any hay for two days. I managed to get her over safe by goin' across fields and coverin' her head with my coat when an auto tooted about three-quarters of a mile away. You know Anderson was a tricky, hoss-tradin' cuss and I says to myself: "Here's where Anderson gets his if he opens his mouth at all."

"What's the matter with her?" says Anderson.

"'Fraid of autos," says I. "She lunges and jumps when she sees an automobile, but she soon gets quiet."

"I've got a good pony to trade you," says Anderson, leadin' out a bald-faced broncho with brands all over him. After awhile Anderson said if I'd give him $10 to boot it would be a trade. I thought it would cost me about $10 to bury the mare if I didn't trade her to Mike so I might as well give it to Mike, so we traded.

That bronk wouldn't move an inch hitched up, you couldn't even get him to walk down hill with anything that looked like harness on him and he had cost me $45, besides I'd killed a lot o' time foolin' with him and the mare. "Somebody'5s goin' to get him, too," says I. I took him to the horse sale and didn't get a bid on him. I tied him out to the rack, stood by him and asked everybody that passed if they wanted to buy a saddle pony.

"What dye want for him?" they'd say. "Twenty-five dollars," says I, and they'd keep agoin'. "Then give me five dolars and you can have him," I'd yell after them, but nobody turned back.

Finally Mike Anderson came along and says, "How are you gettin' along with the pony?" "About as well as you are with the mare I'll bet," says I. "What did you do with the mare anyhow, Mike?" "Well," says Mike, "she throwed a fit when she saw an auto, floundered around, and dropped like a dead horse and after layin' there awhile, I decided that since you'd made me a present of her and paid me for takin' her besides, we'd just shoot her and sell her pelt, so we drug her over into th field." "That's good," says I. "Now give me $5 for the pony and you can have him back." "All right," said Mike and counted out the money.

"That reminds me," said the other milk man, "when I was a boy I had a cousin, who started out with a good horse, made three trades and came back afoot and out $20 besides."

FOALS NEED SPECIAL

The 70 days between July 1 and Sept. 10 will, in many cases, determine the condition for the next 10 months of foals now suckling their dams. The well-bred foal, be it mule, light or draft foal, must have good care if it is to develop as its parentage warrants. Never was the difference in value between the good foal and the inferior one greater than at present. It is possible that it will not pay to feed grain to the foal from inferior parents which promises at best to become nothing more than a cheap, nondescript horse.

The supply of mothers milk which foals have had since birth, together with good pasture and reasonably cool spring weather, have kept most of them in good condition up to the present. But the extremely hot weather and flies of summer, the dry and usually scarce pasture of July and August, and the hard work done by the mares, all work hardships on nursing foals, if they are not protected against these conditions.

Spring foals will learn to eat grain readily if given a chance, and it is profitabel with good foals to arrange so that they can have access to clean, fresh grain. A satisfactory mixture consists of 2 parts crushed corn, 2 parts crushed oats and 1 part bran. If crushed grain is not available, shelled corn and shelled oats may be used.

If foals' mothers are being used for warm work, the foals should not be allowed to follow them, but should run together in a roomy, clean, well-ventilated box stall or paddock. If a small pasture, surrounded by a good fence and containing shade, is available, it makes a fine place for foals. Fresh water should be available constantly, if possible, or else it should be supplied often.

Foals soon become accustomed to staying in a paddock, nursing morning, noon and night, and running with their dams during the night. Handled in this way, foals will go through the trying time of summer in better shape than those treated otherwise. They can be weaned without difficulty and without a setback; and after weaning time, pasture will again be better, the weather will be cooler, and they will o into winter quarters in a satisfactory condition.

With the present short supply of good horses, it seems advisable that attention be concentrated upon the foals which promise to develop into good horses, even at the sacrifice of the less valuable ones.

SCRATCHES OR MUD FEVER

Scratches, mud fever and cracked heels in horses all arise from the same cause. In cracked heels we have slight swelling and a tenderness in the hollow of the heel, and the skin at this part cracks, and if neglected will often become inflamed so badly that they will throw off a discharge. In most cases they toughen the skin at the edges of the heels, caused by the crusting of the discharge thrown out.

The cause of cracked heels in horses is most often found in the animal being worked or made stand in mud or manure, or anything that irritates the heels, without proper attention being given to the cleaning off or wiping off the irritating substance. Improper circulation and imperfect nourishment and several other constitutional disorders tend to bring about cracked heels, and the skin of many horses is sensitive at this part, causing hard or fast work to open the heels.

The treatment is directed to first removing the cause, if possible, and if the animal has to stand in deep mud or worked in any irritating soil, the legs should always be carefully dried off and cleaned daily. A bran mash should be substituted once or twice a week for the regular grain ration, and a physic ball of aloes is useful to clean out the digestive tract and assist in helping the circulation. Fowler's Solution of Arsenic, a tablespoonful in the feed for about 10 days, should be given, and a local treatment of Zinc Oxide Ointment and Lanelin, mixed together, may be applied to the heels. A useful stable lotion that is used by many trainers or race horses, and that has been recommended by the writer, is made by mixing one-half ounce of sulphate of zinc, one ounce of sugar of lead in a quart of water. This lotion is useful in all conditions where the skin of the horse has become cracked.

Grease or Canker of the Heels

Grease of the heels, or what is commonly called "grapes," is an inflammation of the heels, and often extends up toward the hock or knees and gets the name grapes from the growths that are formed, resembling clusters of grapes. Usually in the early stages an oozing of serious matter is noticed and the heels are swollen, and as the swelling extends up toward the hock or knee, the exudate thrown off becomes cloudy, with an odor, and the hairs stand erect on this part of the legs. The foot may become involved and the frog gives off a fetid discharge and teh horn becomes soft and whitish in color. The treatment consists in having clean and hygienic surroundings, and the animal should not be allowed to stand in muddy earth or in any substance that will cause to irritate the legs. The stable lotion that has been mentioned for cracked heels is useful as a local application, and the grapes may be rubbed daily with lunar caustic or some other caustic to destroy them. Dressings of carbolic acid should be applied to the hoof if it is affected, and a physic ball of aloes should be given at intervals.—By Dr. E. F. Hannan, V. S.

Bots in the horse's stomach are hatched from the yellow eggs which are laid by nit flies on horses' legs and on their throats. If the animal is permitted to lick itself, some of the eggs or the young maggots are carried to the mouth and they later reach the stomach, where they attach themselves and feed on the food consumed by the animal. The eggs can be destroyed before the animal licks them off by rubbing the hairs bearing the eggs lightly with a rag moistened with coal oil.

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POULTRY.

HANDLING POULTRY FLOCK WHEN TUBERCULOSIS ABOUNDS

Tuberculosis causes greater losses than any other disease of poultry. Formerly it was not believed to be of much importance to the poultryman. No it is known to exist in many sections of the country.

The cause of tuberculosis in poultry is an extremely small bacterium or germ, the tubercle bacillus, which closely resembles the germ responsible for tuberculosis in man, cattle, and hogs. This organism is so small that it can be seen only with the aid of a high power microscope.

The germs cannot grow outside the body, but once they become implanted in the body, they multiply rapidly, causing the formation of small nodules or tubercles; hence the name tuberculosis, says a Wisconsin circular.

Symptoms Shown by Diseased Fowls.

Here are the symptoms most often seen in tubercular fowls:

In the majority of cases, lameness is the first and may be the only symptom, the affected birds otherwise appearing perfectly healthy. In some cases, limping is seen only after the disease is well advanced. If the joints are affected, they usually swell and are painful. When these symptoms are seen, they should not be attributed to rheumatism, as is frequently done.

In advanced stages the feathers become ruffled and the bird has a droopy or unthrifty appearance. The general lack of condition is shown by paleness of the comb, wattles and skin.

There is a gradual loss of flesh until the diseased fowl becomes mere skin and bones. In marked cases practically all the breast flesh disappears. The term "going light" is then often applied. The appetite is usually good but little benefit comes from the food consumed, showing that the processes of digestion, absorption, and nutrition are interrupted.

Sometimes no symptoms are evident until the disease has reached an advanced stage. Usually birds under one year of age do not show recognizable symptoms as tuberculosis is a slowly developing disease and does not cause death until after a year or more. The length of time between the appearance of the first symptoms and death varies with the resistance of the birds and the care given them. Ordinarily this will be several weeks and many be much longer.

Ways by which the Disease is Introduced.

Tuberculosis is most commonly introduced by birds purchased from flocks in which the disease exists. Another way by which it is brought into the flock is through the eggs from infected hens. Still another way is through meat scraps and green bone which contain poultry offal, and kitchen garbage containing the entrails of market poultry.

Methods by which the disease is spread

Fowls that have advanced tuberculosis throw off the germs with their excreta, scattering them widely. The poultry yards and house and the drinking and feeding paces thus become contaminated and afford the greatest chance for the infection of other fowls. Feeding the entrails from poultry dressed for market is a method of spreading tuberculosis and other diseases in healthy flocks. For this reason the poultryman should never throw the entrails into the pens, unless they have been cooked and should not allow dead birds to lie there, even for a short time.

Experimentally, hogs have been given tuberculosis by feeding them carcasses of tubercular poultry. Under ordinary farm conditions hogs have contracted the disease from infected poultry. So far as is known, no human being has ever contracted the avian form of tuberculosis. Furthermore, under natural conditions, fowls never contract tuberculosis from other domestic animals or from man, even by cating material containing immense numbers of tubercle bacilli.

It is certain that tubercular hens are dangerous to keep on the farm, for they certainly will communicate the disease to healthy hens with which they may come in contact, and may be a means of infecting hogs.

How to recognize Tuberculosis.

While all the symptoms of tuberculosis may be seen in one bird, it is rare to find them. Lameness is most commonly seen and should always be viewed with suspicion. Some diseased fowls will fail to show noticeable symptoms and die without having attracted the attention of the caretaker. Furthermore, the character of the symptoms is so indefinite that they cannot be relied upon with any degree of certainty. Therefore, to determine whether tuberculosis exists in a flock, it will be necessary to examine the carcass of a fowl which has died, or to kill a sick fowl and make a careful post-mortem examination for lesions of the disease.

Lesions are the changes which occur in the tissues as a result of the disease. In tuberculosis they start as whitish or yellowish pin-head-like nodules or spots which form either on the surface or organs, or are imbedded deeply in the sofe tissues. Slowly or rapidly, depending on the resistance of the fowl, these nodules grow until in advanced cases they become as peas, or even larger.

Any organ in the body may show the lesions of tuberculosis. The organs most frequently involved are the liver, spleen, and intestines. In fowls the lungs are less often affected than in cattle, hogs, and man.

The liver often enlarges to several times its normal size and appears spotted because of the large number of nodules or tubercles it contains. The liver is more often affected than any other organ because it acts as a filter for all the bood from the bowels and catches in its meshes any germs of tuberculosis that may be absorbed.

The spleen, when diseased, becomes firmer and much larger, and shows the characteristic tubercular nodules which extend deeply into it.

The intestines show tuberculosis by developing nodules of varying sizes at different places. When a spotted liver or spleen is seen, or intestines with tubercles are found, there is a decided probability that tuberculosis exists. However, there are certain other diseases of poultry in which similar lesions occur, but in these the surface of the organs is not studded with the peculiar raised nodules which, by cross sectioning, are found to extend deeply.

To be absolutely certain about the diagnosis, it will be necessary to have a microscopic examination made of the cheesy material in a tubercle to see whether tubercle bacilli are present. In tuberculosis of poultry the bacilli will be found in almost unbelievable numbers, a condition quite different from that of bovine tuberculosis, where it is often difficult or impossible to find any.

The Tuberculin Test.

Recently a modification of the tuberculin test, which is used so generally for the diagnosis of tuberculosis in cattle, has been adapted for testing fowls. It consists in the injection of a special fluid (tuberculin) into the wattle. Twenty-five hundredths cubic centimeters of tuberculin prepared from the avian type of the tuberculosis germ is injected with a very fine hypodermic needle just beneath the outer skin of the wattle, making an enlargement about the shape and size of a pea.

If the bird is tubercular, one or both wattles will swell in 12 to 18 hours from two to twenty times the normal size. Birds in advanced stages often fail to react, but if some members of a flock react to the test, those in the advanced stage can be discovered by their extreme loss in weight.

Handling Infected Flocks.

Medical treatment is useless, so other means must be sought to control the disease. Moreover, the trouble and expense to treat individual birds would not be justified.

Valuable breeding stock, if not infected, may be saved by having a veterinarian apply the tuberculin test to discoxer the diseased birds. These must be removed at once to stop the progress of tuberculosis in the flock.

Because tuberculosis is very slow in its developments, that is, runs a chronic or long drawn out course, the disease is difficult to handle once it gets a foothold in a flock.

In case tuberculosis is discovered in the farm flock experience has shown that the quickest way to get rid of the disease is to dispose of the entire flock at once. Fowls that are in good condition may be dressed for food. Judgment as to the fitness of the carcass for food would depend on its condition and on inspection of the internal organs hen they are removed.

If a poultry house is dark and damp, windows to admit an abundance of sunlight should be provided. The direct rays of the sun are very effective destroyers of tubercle bacilli. It will be best to delay placing other poultry on the premises for six months or longer. The place must be cleaned and disinfected before restocked with poultry.

It is possible to hold the disease in check by the following method, but it is not recommended as very practicable for some affected fowls may be left: Kill all lame and very light hens; dispose of all hens when they reach two years of age; provide new yards and a temporary house at some distance from the old in which to start another flock from healthy stock.

Ridding the Premises of Tuberculosis

By following step by step these practical directions, the poultry houses and yards may be effectively rid of tuberculosis and other diseases caused by germs:

1. Collect for fertilizer all droppings and litter in the houses.

2. Scrape the floors, walls, and ceiling thoroughly, being careful to scrape out all corners so that no dust or dirt remains.

3. Remove and clean out all hoppers, drinking fountains, nests, and roosts.

4. Saturate everything in poultry houses and yard with a reliable commercial coal tar disinfectant, prepared according to the directions of the manufacturer as given on the original package, being sure that the spray mixture reaches all corners, cracks, and crevices.

5. Repeat the application of disinfectant after ten days.

6. Board up all spaces under hogpens, corn-cribs or other outbuildings where the hens might stray.

7. Fill with fresh dirt all sink-holes and wallows.

8. Plow and crop, when possible, all places where chickens have been allowed to run.

THE COST FEED OF A PULLET

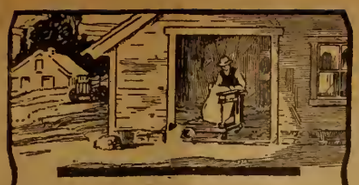
(By Leslie E. Card)

The question of how much it costs to produce a pullet is one of considerable importance to every poultryman, whether he is raising fifty chicks or 5,000. It is especially important because the problem is one of annual occurrence, owing to the necessity of renewing part of the flock each year.

A series of experiments started at the Storrs, Connecticut, Experiment Station in the spring of 1915 was designed to establish what might be called normal growth curves for Rhode Island Reds and White Leghorns.

Incidentally, the data collected show the amount of feed required to grow a pullet of either of these breeds to laying age, and the number of pounds of feed consumed for each pound of meat produced at different ages.

The method of conducting each experiment was to incubate enough eggs to bring off a hatch of 300 strong chicks. No weak or puny chicks were placed in the brooders. A policy of rigid culling was followed throughout the progress of the experiment, the purpose being to handle the flock just



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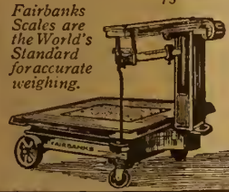

as it would be handled under good commercial management.

The feeding practice was in accord with the method which has been advocated by the station for several years. No solid feed was given until from thirty-six to forty-eight hours after hatching. Sour milk was the first feed and was kept constantly available until the birds were fourteen weeks old. The first day's ration consisted of fine chick scratch feed in which had been mixed a generous amount of grit. As soon as thec hicks learend to eat it well this mixture was fed in litter so as to insure plenty of exercise. Dry mash was hopper fed after the first week and was constantly available.

Leghorn cockerels were segregated at eight weeks of age, while in the case of Rhode Island Reds sesparation of the sexes was made four weeks later when the birds were three months old. After eight weeks in the case of Leghorns, or after twelve weeks of age with the R. I. Reds, the data refer only to pullets. Chicks were reared on the colony plan and were brooded under coal-stove hovers. Throughout the summer, until ready to go into the laying houses, they were kept on free range.

Young Birds Grow Fast

The chicks were weighed just before being placed in the brooder and at seven-day intervals thereafter. Weighings were made between 5 and 6 a. m. disturb the chicks as little as possible and so that their crops should be entirely empty at weighing without the necessity of withholding feed beyond the regular feeding time.

Weekly records were kept of the amount of grain, mash and milk consumed. In all calculations of feed consumption milk has been estimated at ten per cent. solids and has been added to the grain and mash on this basis.

It is a well-established fact that growing pigs make the cheapest gains in weight while young. According to Dietrich, it takes about four months for a pig to grow his first hundred pounds. He will consume during this time 240 pounds of feed. To grow the second 100 pounds takes only two months but 300 pounds of feed. The third 100 pounds takes three months anad 630 pounds of feed: while the fourth 100 pounds requires nine months and about a ton of very good feed.

The data collected at the Storrs Station seem to indicate that a very similar condition exists with chickens. The following table gives average figures for Rhode Island Reds:

	Pounds of Growth				
	1st	2nd	3rd	4th	5th
Number of weeks to make each lb.	6.5	3.5	5.5	5.5	10.0
Pounds of feed for each pound gain	3.0	3.2	6.5	10.0	18.0

It is very evident that the fifth pound is a costly addition as compared to the second or third pound. Consider for a moment a flock of Red pullets averaging three pounds each. To put them up to five pounds each will cost at least a dollar a pullet for feed alone, assuming that feed can be bought for four cents a pound.

Big Birds Need Most Feed

The next table shows the same data for Leghorns. Very few Leghorns reach four pounds in weight and for this reason the figures are given only to three and a half pounds. The Leghorns show up better in this comparison because they do not have so long to grow:

	Pounds of Growth			
	1st	2nd	3rd	Next Half
Number of weeks to make each pound	7.5	5.5	6.0	4.0
Pounds of feed for each lb. of gain	3.2	4.5	7.0	5.0

Table 3 shows the number of pounds of feed consumed for each pound of gain made in successive eight-week periods, and the cost when figured at four cents a pound of feed. Figures for the fourth period are omitted in the case of Leghorns, as this would extend beyond the period of ordinary growth.

Period	R. I. Reds		Leghorns	
	Feed per		Feed per	
Weeks	Lb. Gain	Cost	Lb. Gain	Cost
1- 8	3.5	$0.14	3.5	$0.14
9-16	5.5	.22	6.5	.25
17-24	8.0	.32	10.0	.40
25-32	23.3	.93	...	...

The last table shows the average amount of feed consumed a week by each ten chicks at several different periods in their development. Notice that the Reds keep in advacne of the Leghorns from the very first:

Feed Consumed per 10 Chicks

Weeks	R. I. Reds lbs.	Leghorns lbs.
1	1¼	1
8	10	8
16	15	12
24	15	15
32	18	16

To grow a R. I. Red pullet to twenty-four weeks of age requires about twenty-four pounds of feed. To grow a Leghorn pullet to the same age takes about twenty pounds. After that age the consumption is from one and a half to 2 pounds to each bird in a week When there is added to the feed cost the cost of hatching eggs, incubation, coal for brooding, use of equipment and labor, it is readily seen that the growing of pullets is a rather expensive proposition. Because the cost for feed increases so rapidly as the birds grow older it is important that the young stock should have the very best of care and an abundance of feed to obtain maximum growth during the time they are putting on flesh most efficiently.

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It keeps the birds quiet and under control. No flesh is wasted or muscles hardened by undue exercise. The added flesh during this finishing process is the cheapest of the whole bird to produce and it increases the value of the whole carcass from 10 to 25 per cent.

How is the crate made?—Almost any packing box will answer for a temporary crate, but it is better to make a good one that will last. The crates in general use are six feet long by sixteen inches wide by twenty inches high and divided into three compartments. They are made of laths or slats, nailed on a light frame.

What kind of a bird?—The flesh of any bird is improved by finishing in the crate. Best results are obtained from cockerels of the general purpose and heavy breeds.

What is the best feed?—Finely ground grains mixed with milk, make the best ration. Oats, barley, corn and buckwheat are all good. Two or three grains mixed together are better than one alone. Wild buckwheat screenings also make a cheap and satisfactory feed. Milk, preferably sour, or buttermilk, is very valuable for mixing the feed.

Other things to remember.—Do not feed the birds for twenty-four hours after putting them in the crate and then feed very sparingly for several days. Keep the birds hungry for two or three days and gradually increase until a full feed is given, then feed twice a day just what they will eat up clean. Clean out any feed left in the trough after each meal. Dust the birds for lice before starting and again before killing. Kill by bleeding in the mouth and piercing the brain. Pluck, dry and cool before packing. Write Experimental Farm for Bulletin No. 88, for further information.—F. C. Elford, Dominion Poultry Husbandman.

TO MAKE PROFIT FROM YOUR POULTRY BETTER STOP LEAKS

My observation teaches me that many a farmer considers the farm flock a sort of necessary nuisance. He feels that it is beneath his dignity and a waste of time for him to give any help in chicken raising. Still under favorable conditions, nothing on the average farm pays better for the time and money invested.

It is hard for the farmer to realize that, because the egg checks look so small and insignficant beside the hog checks which spring and fall run into three figures, there is no comparison in value of the "porker" and his feathered friend.

Let him not forget that the egg check comes every week and although he may not be able to add to his bank account every time a check comes, that same bank account looks more prosperous than if it were drawn on every time the family was in need of groceries or every-day clothes. It has been my experience, too, that the hen did her part toward buying the Sunday clothes and even gasoline for the automobile. All this she has done besides furnishing fresh eggs for the table the year round which fact helped along the farmer's hogcheck to say nothing of the chicken roasts, stews and fries which saved the pork and thereby increased the hog check.

So much for what the chickens do for the farmer. What does the farmer do for the chickens? Oftentimes he does not do nearly so much as he should or as he could to make them more comfortable and as a result more profitable.

In the first place the farmer seldom houses his flock properly. Often in winter the quarters are subject to draughts and snow sifts through the cracks and broken window panes. Then during the summer farm folks find so many things to do of seeming more importance than the poultry, consequently they are nelected. They do not get their feed regularly, if at all, and their houses become infected with lice and mites, and so the farmer begins to wonder why the hens quit laying so early.

Hens will lay in the spring even under adverse conditions, because it is their nature, but as summer advances they must have some atention and care if they do not fall off in egg production. Another cause of loss and disappointment with the farm flock is the fact that too often both young and old stock are given the same runs year after year without any means of renovation being employed, until the soil becomes foul and contaminated and a fruitful source of disease. A frequent sprinkling of lime is good but the runs should be occasionally plowed and seeded.

Another thing I have learned from observation has been at close range for I have lived on a large farm where poultry keeping was a side line and often not so profitable as it should have been. This last mistake which I shall mention is one of feeding mature and growing stock together. In the first place it is a case of the "survival of the fittest," the stronger thriving at the expense of the weaker. Also it is a mistake from the fact that mature and growing stock require a different kind of feed.

I have here ctied a few of the "leaks" which seem to me to be most prevalent among the poultry keepers. Perhaps if you investigate you will find yours in a different direction at any rate if you the dissatisfied with the returns from your flock it will pay you to investigate.—G. A. Meredith.

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AN OUNCE OF LOYALTY

(By R. N. Wall in Everybody's Magazine.)

The placid calm of a late September afternoon pervaded the dim old walnut-furnished office of the Mears Plow Works. Spider webs fell in festoons over the tattered backs of fat ledgers and spare journals stacked upon the shelves. Dust lay heavy upon yellow packages of letters and contracts stuffed into rows of pigeon holes below the books.

Burk, the narrow bookkeeper, was noiselessly matching nickels with his assistant. The invoice-and-order clerk had his head bent over a sheet of figures so placed that it permitted his eyes to fall upon the open pages of "Treasure Island." The sleepy stenographer was nodding over a bit of fancy work, and Tommy, the solemn office boy, was doing nothing whatever.

Within the private office the same drowsy atmosphere prevailed. The young president, John Mears, was at his desk, the sleeves of his custom-made shirt rolled up like any workingman's; but he was not working much. Opposite him, Elizabeth Carter, the trim young woman who acted as office manager, now and then raised a hand to her pretty mouth to stifle a yawn.

Into this backwater of business plunged a brisk young man, as suddenly as a gasoline launch bursts into a peaceful millpond. He was a slender person, with big hornrimmed eyeglasses astride a prominent nose, and low shoes with extension rubber soles. He entered with such purposeful swiftness that the somnolent office force scarcely perceived him until he had thrust his card at the president.

Mears rose with outstretched hand. "I'm mighty glad to see you," he genially greeted the visitor. "Miss Carter this is Mr. Epperson, the efficinecy expert with whom we have been corresponding, and who is going to show us how to make two plow points spring where one sprang before. Miss Carter is a stockholder," Mears explained to Eperson, "and has charge of our office; she used to be my father's assistant. Now she's mine, or I'm her's—I hardly know which. I've been in charge only the few months since my father's death, and Miss Carter really knows more about the business than I do."

Miss Carter gave the expert a firm, cool hand and an appraising glance from her wide, clear eyes She was not a beautiful woman, but she was so clean and fragrant and wholesome that she was charming.

"Mr. Mears thinks that our ways are old-fashioned and that we need outside assistance," she said. "I believe you installed a system at the North Bend Chilled Plow Works. Do you think a little business such as ours needs a system like the great plow works there?"

"More," declared Mr. Epperson bluntly, with a suggestive look towards the open door, "if your whole works are run like your office."

Miss Carter looked at the young man in cold surprise. For an instant she forgot that he was engaged to criticize.

Mears broke in quickly: "That's just the trouble! I can run a football team, but I can't get this place on its toes "

He was a very splendid young president, tall, wide-shouldered, narrow-hipped, with clothes that seemed a part of him. The third of a line of famous plow-makers, his own business experience had just begun. His father had died while John was still at college, and he had been shot into the business with a suddenness from which his head was still swimming. With the ardor of youth, he burned to put the conservative old plow company in the front rank of modern trade.

He placed a perfectly kept hand on one of the pearl push-buttons lately installed upon his father's old desk.

"Tommy," Mears instrutced the solemn office boy, "ask Mr. Moran to come in. Moran is our superintendent," he informed Epperson. "He's a fine fellow but getting pretty well along in years, and I can't hurry him out of his usual routine. Perhaps you can."

"That's my business," asserted the expert. His prominent light blue eyes roved about, absorbing every detail.

A heavy step made the worn floorboards of the outer office creak, and Dan Moran rolled in. He was a bull-necked old giant of a man, with a great, ruddy, good-natured face. His iron-grey hair had been hastily wet and plastered on his skull, and as he advanced he wriggled his wrinkled red neck in a blue linen collar buttoned upon a blue flannel shirt. His big jaws were busy with a mouthful of fine-cut.

"You wanted to see me, Johnny?" he inquired, and ducked his head in comprehensive greeting. He had carried the president pick-a-back about the foundry when Johnny was four.

'.I want you to meet Mr. Epperson, an efficiency engineer, whom I have engaged to make a survey of the shops."

"How-de-do?" grunted the old man, giving the expert a sharp look from under his shaggy, grizzled brows.

"You know, Dan," Mears went on, fingering the black opal pin that studded his rich scarf, "that things here aren't run the way I think they ought to be. We've got too much capital tied up in dead stock and past due accounts; our output is small in proportion to our force; much of our machinery is scrap; we've got some old fogies for foremen——"

"Hold on, Johnny; lemme see if I git you right," interposed Moran goodnaturedly. He pulled a chair in range of the cuspidor, sat down, and spat. "You mean you don't like the way I'm running the works?"

"Not exactly that, Dan," said Mears, with a little frown at Moran's bluntness. "My criticism is of the whole business—office and factory."

"I dunno a darn thing about the office, but I kin tell you this, Johnny: the shops is all right. I helped your granddaddy start this business. Him and me laid out this plant and hired the men; a lot of 'em are here yet—"

"I presume that's one trouble," interjected Epperson. "Old concerns have a tendency to accumulate dead wood."

"There ain't no dead wood around here, young man," snorted Moran. "Maybe some of the boys ain't as spry in the legs as they was once, but their heads are working!"

"The point is that we aren't paying dividends," exclaimed Mears impatiently. "You can talk a week and you can't get around that."

"We're going to pay 'em," Moran insisted mildly. "I'm just as anxious for dividends as you are. Ain't I got forty shares of stock?"

"We can't declare any until we have a surplus, and you know how cramped we are for ready money."

"Wait until the new line of chilled plows we're building gets started. You know it's cost us a heap of money for patterns and material, Johnny."

"That may help, but I want to know how we stand," Mears insisted. "Mr. Epperson is here to examine impartially and report to me; then I'll know what to do. I realize that I lack the necessary experience to assemble the data myself."

"That would come, Mr. Mears," Miss Carter ventured.

"Pardon me," cut in Epperson, turning his horn-rimmed gaze upon her. "You are wrong. A man is too close to his own business to get the proper perspective."

"In any case," John spoke firmly, as he rose and turned down the sleeves of his crisp and costly shirt. "Mr. Epperson is here. I want the survey made, and I expect both you and Miss Carter, Dan, to give him every assistance."

"Sure we will," agreed Moran heartily. Miss Carter said nothing whatever.

She had her say, however, when the young president had left with Epperson to see that he found comfortable quarters.

"I don't approve of this thing a bit!" she declared, her attractive face flushed. "Mr. Mears is so impulsive!"

"Johnny's all right," said the old superintendent. "He's like all boys—he wants to move the world in a minute. Let this here expert experiment."

"We've always been like a big family," objected Miss Carter. "Most of our men have been here a long time; they're well paid and considerately treated, and they feel that they belong. I hate to see that sentiment spoiled."

"I reckon we'll have to shut our eyes and gulp our medicine," opined Moran in his easy-going way."

"You can if you like," retorted the fiery young woman, "but Mr. Epperson will have to do his experimenting without and help from me. I've been here five years, and John Mears hasn't been here five months'"

"And I've been here forty," grinned Moran, "and learned not to fly off the handle. Go slow, young lady," he warned, as he shambled off towards the factory.

Miss Carter entered the office next morning, cool and trim in summer white. She was a little earlier than usual, for she had planned to finish her routine work before Epperson arrived.

Instead she found that efficient gentleman already on the job. He was standing over the stenogarpher, a watch in one hand, a perfectly pointed pencil in the other, his note-book open on the desk before him. Pink and moist, the girl was hammering madly upon her machine, frequently stopping to make frenzied corrections. Burk was sulkily posting; the other clerks were desperately busy, and, in the president's office Tommy was raising a perfect whirlwind of dust.

"Good morning, Miss Carter," said the efficiency expert curtly. "I expected that you or Mr. Mears would be here to introduce me to your staff. As you were not, I have taken the liberty of becoming my own sponsor."

"That is all right," answered Miss Carter, annoyed, but determined not to show it, "I meant to get here early. Mr. Mears seldom comes in before ten."

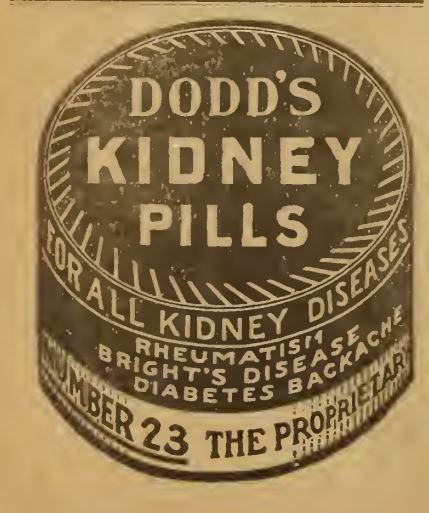
Mr. Epperson raised his thin brows.

For two hours Mr. Eperson delved into the office methods and expounded his theories. He overlooked nothing, and very little met his approval. Miss Carter kept her composure, but it was a strain. As for Burk, he found opportunity to whisper:

"Say, can't we get this guy out in the factory and shove him against a band saw?"

About ten o'clock Mears strolled gracefully in. "Well, old man," he greeted the expert genially, "what do you find wrong with our little old office?"

"Pretty much everything." Epperson looker his disgust. "I'll give you the details in my report. I'll take the factory now."



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"What do you think of him?" Mears asked Miss Carter, as the expert's ramrod figure vanished.

"He seems very energetic," the girl responded.

"Energy is what we need," John blithely assured her. "The place is full of dry rot. We need some one to wake us up. Got to speed to hold our own these days, you know."

A little later Moran lumbered in. "Say, John," he rumbled, shifting his quid, "is this here expert to be stoppin' my machines and badgerin' my boys about their motions?"

"Whatever he thinks proper is to be done," said Mears curtly. Did I not make myself clear?"

"Oh, all right," said Moran mildly quizzical. "I just wanted to know."

So out in the factory Mr. Epperson, his horn-rimmed glasses riding high on his projecting nose, his light-blue eyes peering owlishly, penetrated into every corner of the works. He followed the iron pigs from cars to foundry, he watched the assembly of castings into plow bases, he neglected neither wood shop, paint shop, nor warehouse.

Stop-watch in hand, note-book ready, pencil poised, he asked countless questions and made interminable notes, which, at night, he elaborated on a portable typewriter in his room.

A week went by, and one morning he appeared at the office, a sheaf of typewritten manuscript under his arm. "Where is Mr. Mears?" he demanded.

"He left last night on a long-distance call to help one of our salesmen who is trying to close a big deal in North Carolina," Miss Carter informed him.

"That is annoying," compalined Mr. Epperson, removing his glasses. "I am obliged to go to New York today. I have completed my investigation, the result of which is in this report."

"You have suggested many changes?" asked Miss aCrter in acid accents. "I gather you disapproved of everything."

"I was not engaged to be complimentary," said Mr. Epperson stiffly. "I am like a dentist; the more necessary my services, the more painful they are. I have recommended a number of changes."

"May I ask what the most important are?"

"My report was made for Mr. Mears," Epperson informed her, beginning to polish his glasses with a bit of pink paper, "but as you are a stockholder and in position of some importance, I will summarize them.

"I have suggested some new machinery; a different lay-out for the factory; an entirely new office system and certain resignations."

"Resignations?" faltered Miss Carter.

The precise young man replaced his glasses and surveyed the girl with some disdain. "Yes. The most important would be Moran's. Several of the foremen should go also. These men would not fit into any system I could outline.

"Mr. Epperson, do you realize that Mr. Moran helped to found this business? That he, a small stockholder, works for it as loyally as if it were all his own? It would kill him to be asked to resign!"

"I am not here to protect the Morans," said Epperson calmly. "They block the wheels of progress. Get results or get out. Properly run, this can be made a paying business. As now conducted, it will soon be bankrupt."

"Better bankruptcy than to discard like worn-out plowshares the men who made the works," flamed the distressed girl.

"Sentiment pays no dividends," sneered Epperson. "Which brings me to a proposition I have decided to make to Mr. Mears.

"What is it?"

"This is a good field for a properly run plow business. I have some idle money that I should be willing to put with my services into the concern. I have suggested that I take over Moran's stock and become general manager."

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Miss Carter gazed at him dumbly.

"I"—Epperson expanded his chest a trifle—"will guarantee to pay dividends at the end of a year."

Almost beside herself with anger, Miss Carter strove to speak, but Epperson, with a superior gesture, waved her aside. "Please ask Mr. Mears," he went on in his brusque way, "to read this report carefully and to consider my appended offer. I shall return in a few days. Good morning!"

For a moment Miss Carter stood dazed. Then as her anger mounted, she felt that she must talk to some one or explode. Burk stood at his ledger, a furtive ear cocked in her direction. She wondered if he had heard. In any case, he was not the confidant she wished, and she sped out to find Moran.

She came upon him in the foundry, up above a cupola, watching a gang of men charge it with broken pig-iron, scrap and coke. The old superintendent's blue shirt was open over his hairy chest and he was spurting tobacco juice into the stack at such regular intervals than an onlooker might have thought it a necessary ingredient.

"Mr. Moran!" the girl cried. "Mr. Epperson has finished his report, and what do you suppose he recommends?"

"I dunno," boomed the old giant in his big voice, trained to carry above the rattle of machinery, "but I'm glad he's done. I'm sick of seein' the four-eyed little owl nosin' around."

The girl stopped for a moment to get her breath, her hand pressed to her side, her face scarlet under its crown of bright hair, for she was panting with exertion and excitement. Her white clothing contrasted sharply with the grimy garb of the busy men. With an imperious gesture she drew Moran aside.

"Epperson wants ever so many changes," she told him.

"The hell he does!" roared Moran. "Excuse me, miss."

She went on slowly. What she felt he must know was not so eaasy to tell him. "He wants to buy your stock—and take charge. He says that—that you—and some of the formen—are too old—that you won't speed up—that you must resign."

If the words brought dismay to the old giant's sturdy heart, his ruddy face gave no sign. His jaws continued

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to function with the same regularity. His eyes followed his men.

At last, seeing that the girl expected him to say something, he spat, and mumbled, "Well?"

"Is that all you can say?" she flashed, stamping her foot.

"What is there to say?" asked the veteran. John's away. If he comes back and says this here expert is right, I reckon I'll have to step out. I'm getting old, anyway; reckon maybe it's time I quit."

The girl doubled up her firm little lsts. "I wouldn't give Eperson the satisfaction! I'd fight!"

Moran merely shook his head.

If the superintendent refused to betray any feeling, others did not take the matter so calmly. Before the day was over Miss Carter saw that the news had spread; she guessed that Burk had heard and had talked. Little knots of dark-browed men formed about the yard at noon; sullen glances were directed at the office windows as the hands streamed through the gate at night.

The next morning Mr. Mears came back, as creased and speckless as though he had not spent the night upon the train. He was pleasant, as usual, and just a trifle proud of himself.

"We put it over," he announced in his jubilant way. "We signed them up with twelve counties as territory, and they placed an order for five cars of goods. In two years we'll be selling them a car for every county. That's the beauty of the plow business—the increasing repair trade!

The young president was too pleased to note the absence of Miss Carter's congratulations.

"These orders are for immediate shipment," he explained importantly, "and the season is late. Any stuff that isn't ready must be rushed. By the way, this will give Epperson a chance to get a line on our handling of a rush order. Where is he?"

"He had to go to New York. He has finished his survey and made a report, which is on your desk."

"All right," said John. "I'll read it later. Have Moran come in, will you?"

"Dan," he instructed the superintendent, "here's an order for five cars from the Wilmington Supply Company. To fill it promptly and properly means a lot to us. We must get it right out. How soon can you do it?"

"I dunno," answered Moran, feeding himself a great wad of fine-cut. "Lemme see the specifications."

"Well, what about it?" John hurried the old man, as he went ponderously over the order."

"I dunno," Moran repeated. "We'll have to make some if it. We'll do the best we kin, Johnny."

"Have the order written up and send it out," mumbled Moran through his quid. "We'll do the best we kin; you know you can't hurry iron much, Johnny."

"You see!" No system!" complained Mears to Miss Carter, when Moran had gone. "We ought to be able to tell exactly how long a certain piece of work will take, and all I can get out of Dan is that he'll do the best he can! It's exasperating! If that order is cancelled on account of delay, his best won't be good enough!"

"You gave the Wilmington people long time," Miss Carter nastily changed the subject. "Why did you do it when we need cash so? That steel note falls due next Monday, and it must be paid, not renewed, for they won't let us have any more material until the last is paid for."

"I know; I had to do it," he told her. "We can't hold up a big concern for a sight-draft, bill-of-lading attached shipment. I couldn't let them know our fix. Don't let that note worry you. We'll find the money somehow—I reckon."

The girl looked sharply at him. She saw that anxiety showed beneath his accustomed jauntiness, and she realized that the situation did worry him, whether he would admit it or not.

Mears went to his office. An hour later Miss Carter entered and found him leaning back in his chair, his long legs thrust over a corner of his desk, the famous report in his lap, and an unusually thoughful look upon his face. He brought his feet to the floor as she entered, but he did not quite come out of his brown study.

"Have you read the gospel according to Mr. Epperson?" she asked sarcastically.

"Yes," said John in an absent tone.

"Do you intend to follow his suggestions?"

"Most of them."

"Then there will be radical changes?" The girl could not keep the concern from her voice.

"Why, yes," he answered, with a shade if impatience. "What's the use of paying for advice unless one takes it?"

"And Mr. Moran?" The voice quivered.

"I can't tell you my plans yet," said John. He picked in a worried way at the scarab in his tie. "I haven't fully formulated them. As for Dan—I've been undecided about him for some time."

Miss Carter had no heart to say more. Of course, the president would accept Epperson's offer; the girl had never doubted that, but she had hoped that Mears would find a way to keep Moran. She realized that it would be folly for him to reject the expert's proposition. His advent would lighten Mear's responsibilities by giving him an efficient manager who knew the business to the last bolt. More than all, it would give them what they must have at once, ready money. They were heavily in debt, they needed more material, and five thousand dollars must be paid to the steel company the following morning.

There was every reason for Mears to accept Epperson's offer, and nothing save sentimental scruples to cause him to decline. And yet, Miss Carter's heart ached to think that even at John's greatest need he would drop the man who for years had been a major part of the business, just because he had grown old and slow. She had hoped that Mears wah bigger than that; but still, when she came to question herself, what else could he do?

She determined that she would try to talk to Mr. Mears in the morning. She was too disturbed to do it at once; she would say more than she meant.

But in the morning she found on her desk a brief note from the president, saying that he would be out of town a few days, and asking her to look after the Wilmington order. Miss Carter knew no reason why Mears should absent himself; it seemed to her that he was not acting fairly in leaving at a critical time. Then it flashed upon her that he wished to avoid any discussion of the changes to be made until Epperson came back. In the meanatime—he had underlined it—they were to rush the Wilmington order! Her lip curled.

Her thoughts were interrupted by Burk, who sidled over, and, raising a corner of his mouth as he had seen crooks do in the "movies," rasped: "Put you wise to something; this scheme of Epperson's has leaked out!"

"How? Through you?"

Burk's eyes shifted under the girl's clear gaze, "Don't matter who told it," he muttered evasively. "The men are on, ripe for trouble. They're awful sore about Moran being let out. He's been here most forty years. He's hired half the men; he knows 'em, and their wives, and their kids. Mears don't know the boys from Adam on the street."

"He's hardly had time," Miss Carter reminded.

"Aw, he don't want to know 'em" scoffed Burk. "All he cares about is the coin. The men see Dan about to be thrown out, after all these years, and that smart stiff, Epperson, coming in to drive worse'n Mears. They say what's the use of rushing the Wilmington order and getting chucked afterward?"

"I don't know that I blame them," sighed the girl.

"They're going to have a meeting tonight," the bookkeeper pursued—"the forman and some of the other old hands; kind of secret, you know.'

"Is Mr. Moran in it?"

"Naw, not yet. They've tried to sound him, but he just spits and cusses and tells them to mind their own business. He's promised, though, to meet the boys tonight."

"What do they want to do?"

"Quit cold and tie the factory up. They can do it too. By the time things are straightened out, the Wilmington order will be a goner. They know it's got to be shipped quick, the season's so late."

"Why don't they appoint a committee to see Mr. Mears?"

"What's the use? He wouldn't listen to 'em, and he ain't here, anyhow. Like as not, he figured they'd kick, and skipped on purpose. He didn't figure far enough to see they was ready to walk out for old Dan!"

Burk's diagnosis of the president's absence confirmed Miss Carter's own judgment. Everything pointed that way. And, Miss Carter thought, an appeal probably would have been useless. Mears had harped on efficiency since he had taken charge. He had insisted on engaging Epperson, and he had declared, again and again, that mossback methods must give way to modern practice.

Miss Carter worked wearily through the day, too depressed to discuss the matter further with any one. All through the night she kept waking at intervals to wonder at the outcome of the meeting, and the next morning she hurried to the office, half sick with worry.

Burk was not at his desk, and the girl was in no mood to wait, so she scurried out to find Moran. He was in the foundry, grimly watching the molders prepare the flasks. His figure loomed large as ever among the squatting workmen, but Miss Carter fancied that the old man's heavy shoulders were more stooping than usual.

"What are you going to do, Mr. Moran?" she asked.

"Do about what?" rumbled the giant.

"The meeting last night—Burk told me——"

"Oh, that," growled Moran in disgust. "There wa'n't nuthin' to that. Some of the boys shot off their mouths, but I shut 'em up. I told 'em that what Epperson reported, or what John plans to do ain't got nuthin' to do with what they got to do now—which is to git out that Wilmington order. I told 'em the first man that sulked would git his time."

"Then there won't be any strike?"

"Hell, no! Excuse me, Miss. Think I'd stand for a play like that? Lay down on John in a pinch. His granddaddy and me built this business. I been in it all me life. Maybe it's time for me to git out. I dunno. We change as we git older, I reckon, though I don't feel no different."

"Have you said anything to Mr. Mears?"

"No!" roared Moran, red hot. "What would I say? I ain't goin' to holler and I ain't goin' to resign. If John wants to git rid of me, let him come out and say so. Till he does, my job is to run this factory and git the goods out, and, by the great horn spoon, I'm goin' to do it!"

The girl went back to the office, her own bitterness stilled in part by the old man's steadfast loyalty. Yet she could not but contrast the whimsical lightness of the young president with the sturdy devotion of the old superintendent.

John returned on Monday morning. In a new pincheck suit and scarlet scarf, from his low tan shoes to his smoothly-parted hair, he looked the elegant idler, and if he had any worries, his complacent face did not show them.

He stopped to hand a few papers to Burk, and after a word wiith him came to Miss Carter's desk.

"Mr. Epperson has returned," she hastened to advise him. "He is waiting for you in your office."

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"Fine," exclaimed John "See him in a moment How about the Wilmington order?"

"All gone but the last car—I'll find out about that." Miss Carter answered.

"Bully!" sad Mears.

"By the way," Miss Carter called, as the president turned, "what about that steel note? It falls due today and we haven't the money to meet it."

"Oh, that'll be all right," returned John casually. "Wait until I see Epperson and I'll tell you about it."

He entered his own room before the girl could question him. Undoubtedly he had made up his mind to accept Epperson's offer. It was unlikely that anything she could say would influence the president, yet she resolved to try. She sprang up to folow him into his office.

As she opened the door, Moran rolled in, the bills for the last car in his hand. "John come back?" he asked. "Thought he'd like to know we got the stuff all out."

"Tell him," the girl snapped bitterly, and pushed the old man ahead of her into the private office.

Epperson was saying: "When will you be ready to discuss my rejort?"

"Right now," smiled John. "I've made up my mind."

Moran advanced holding out the bills-of-lading. "The Wilmington order has went," he rumbled in his heavy voice, too big for the little office.

"That's good," observed John, looking up absently. Then as Moran turned to leave, he called after him: "Wait a moment, Dan; you had better hear this."

The old superintendent came to a stop, edged back, and waited stolidly.

Miss Carter felt herself trembling. Was Mears going to sentence the old man so badly before them all? It was cruel. Even the unemotional Epperson seemed surprised, and stammered:

"You—you say you have made your decision? Er—what are you going to do?"

"Adopt your ideas, of course," declared John. "The report's a model; finest thing I ever saw. Your plans are bully in the main, although I can't quite see my way to do everything you recommend."

"Some of the minor changes may not need to be made at once," chimed Epperson, highly pleased and disposed to be easy in his victory. "And as to my proposition to put in some money and take hold?"

"Ah, that is another thing, Epperson," John drawled, "and the one I couldn't see my way clear to do. I have no doubt that you could produce dividends, but I don't believe you would fit into our little family. I know I can make Dan see the wisdom of your system, but we couldn't get along without Dan."

John beamed pleasantly upon the little company, and, squinting across his desk into the mirror which he had hung in the old office, straightened his scarf the least degree.

"Then you don't think Mr. Moran is too old to run the shops?" Miss Carter gasped.

"The way the Wilmington order has been handled proves that nothing fundamental is wrong," laughed Mears, "On the contrary Dan is getting so spry I think we had better boost his salary a bit. That is what I had in mind the other day," he continued, turning to Miss Carter. "but I wanted to see how the big rush order came through."

Mr. Epperson had risen to his fect. His light-blue eyes glared through his horn-rimmed glasses. "There is no reason, then, why I should detain you longer," he said stiffly.

"Only to let us thank you for your very able services," said John.

Miss Carter followed the expert out. The narrow bookkeeper was slipping into his coat.

"Where are you going?" she asked.

"To deposit this check," he explained, showing her a slip of thin paper. "Mr. Mears went down to Norfolk and squeezed that big past due account out of old Robinson. Say, the boss is a hustler, ain't he?"

Miss Carter's eyes were blurred with moisture. As she dabbed them clear she saw Mears and Moran come out of the private office, the young president's pin-checked arm laid affectionately upon the old superintendent's blue flannel shoulder.

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TRAVELLING WITH CHILDREN

One who has oportunity to observe the relations of parents and children on trains cannot avoid becoming convinced that parents are not good traveling companions as a rule. It seems that at least nine out of ten parents think a child of any age when traveling should sit in his seat and "behave himself." One often hears a parent speaking roughly to his children if they stand up in their seats to look around at the people about them, or if they try to run up and down the aisle, or swing between the seats and so on. The parent does not wish to do these things himself, so why should his children wish to do them? Many parrents treat their children on a train as though they were mischievous when they will not sit in their seats.

The majority of children from the ae of three to fifteen or thereabouts want to look out of the window when they are on a train. If the weather will permit they want to have the window up and put their heads out a few inches. It is a fascinating experience for a child to watch the objects and to feel the air rushing past him. Most parents will not allow their children to have this fun; if the children persist in their attempts to gain the experience the parents will punish them. This is unfortunate. Most children run no danger whatever in doing this. The parent could easily keep an eye on an adventurous child to see that he did not reach out the window too far. A single word would be enough to cause such a child to play safe.

Traveling is a fatiguing process for children, mainly because it prevents freedom of muscular action. At best a child is greatly restricted in his movements. So he develops tensions and becomes restless; and unless he can find relief for his tense nerves he will become disorderly. This is why nature urges him to push his head out the window and pull it back again, jump up and down in his seat, run to and fro in the aaisle, swing between the seats and indulge in other motor performances.

The typical parent seems to be in terror lest somethiug will happen to his children on a train if he gives them any leeway to move about. If they move toward the door of the car he thinks they will certainly fall off the rtain and be run over. So you can hear him calling to them to come back and sit down. But the records of accidents on trains show that children who are traveling are practically never injured. There is hardly a possibility of a child falling off a train by going to the door of the car to observe what is taking place. Most children are very cautious about taking chances in respect to this matter. They could be trusted to keep out of danger without the parent saying a word to them. If the latter thinks there is danger he ought to stand near enough to the child so that he could protect him in case of need.

The writer has made observations on a number of trains recently to find what means parents provide to divert their children from running up and down the aisle and performing other forbidden acts. Rarely does a parent think of taking in his satchel an interesting book or two which he can read to his children, or a game like checkers which he can play with them. But if the children ever need to be read to it is certainly when they are travelin. The noise and movement and general excitement tend to overstimulate them, and their attention should be held to quiet and interesting things for some part of the time while they are on a train. This can best be done by interesting them in an attractive story or in pictures or quiet games. A parent who is starting on a long trip and does not make provision of this sort is foolish. There will certainly be unceasing strain and stress between him and his children; and it will be disagreeable not only for all the travelers who cannot avoid being irritated when they observe parents repressing and even punishing children who are trying to release tensions developed by the restraints of the train.

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Iron first without starch, then place centerpiece carefully on board, put over it a thin, smooth cloth dipped in cold starch and iron dry. They will retain their shape and look new.

JUNKET

1 quart of milk.
1 junket tablet.
½ teaspoonful of vanilla.
3 tablespoonfuls of sugar or sugar to taste.

Heat the milk until warm, but do not bring it to the boiling point; add the sugar and flavoring, and the junket tablet, which has been dissolved in two tablespoonfuls of cold water. Mix quickly and pour into ice-cream glasses or custard cups. Set in a warm placc until congealed—about thirty minutes—then set in a cold place. Be careful not to shake the glasses or cups. It is important to have fresh whole milk when making junket.

BERRY MILK SHERBET

1 quart of milk.
1 cupful of berry juice.
1 cupful of sugar.
1 tablespoonful of lemon juice.

Put the sugar and fruit juice into a bowl; stir until the sugar is dissolved; put the milk into a freezer that has been packed in ice and salt (three parts ice and one part salt); then add the fruit juice and lemon juice. Turn at once. Raspberry, strawberry and loganberry juices are used the same way, or one may use fruit juice from rich canned fruits or berries, using sugar to taste.

FROZEN CUSTARD

1 quart of milk.
1 cupful of sugar.
2 eggs.
4 tablespoonfuls of cornstarch.
1 teaspoonful of salt.
½ teaspoonful of Vanilla extract.

Beat the eggs and sugar until well mixed; then add the cornstarch, which has been mixed with a little cold milk. Add all to the hot milk in a double boiler. Cook for thirty minutes; cool and add the salt and flavoring. Freeze. Half a cupful of fruit, chopped fine, may be added when the custard is partly frozen.

MILK SHERBET

1 quart of milk.
1 cupful of sugar.
1 tabelspoonful of vanilla.

Mix these ingredients and freeze the mixture in the manner described in the recipe for berry milk sherbet.

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MOTHER AND CHILD VERY LOW WITH DYSENTERY.

Dysentery is one of the worst forms of bowel complaint. It comes on suddenly, the pains in the bowels become intense, the discharges occur with great rapidity, and are very often accompanied by blood, and the action on the system so weakening that its termination often proves fatal.

When the bowels get loosened up in this way, and you wish to check the unnatural discharge without bringing on constipation, there is only one remedy to use, and that is Dr. Fowler's Extract of Wild Strawberry.

Mr. W. J. Metcalfe, Tofield, Alta., writes: "I wish to state that we have used Dr. Fowler's Extract of Wild Strawberry with good results. I can say that it can't be beat. It saved my wife and little boy last summer, when they were very low with dysentery. We always have a bottle of it in the house, and would not be without it if it cost five dollars a bottle."

"Dr. Fowler's" is not an experiment but a tried and proven remedy that has been used in Canada for the past 72 years.

There are many cheap imitations and substitutes of this sterling remedy on the market. Beware of them and accept only the original when you ask for it, as these cheap no-name, no-reputation, so-called strawberry compounds may be dangerous to your health. The genuine is put up only by The T. Milburn Co., Limited, Toronto, Ont. Price, 35c.

CHILDHOOD

By Charlotte Conkright Kinney

What if God had not put children on the earth,
But only grown up men and women!
Though men were kinder, women lovelier,
And all fair things,—the Flowers, Birds and Butterflies
Were twice as fair,—but still there were no Children
No tramp of little feet in play,
No shout of joyous laughter,
No nesting heads against our breast,
No twining arms around our neck,
No dancing eyes, nor tender lips—
O! then, Dear Heart, this World would be
A place too weary
Far too dreary
To live in—You and Me!

THE BACTERIOLOGY OF DISH-WASHING

The modern housewife is keen on the subject of eliminating the germ. Never before in the world's history has the poor genus bacterium been so ceaselessly harassed and persecuted as he is to-day. On every side he meets the housewife armed to the teeth with dustless dust mops, germicides, antiseptic sprays, vacuum-cleaners, and fumigators. Still, he doesn't seem to lose hope; and perhaps it is because Mrs. Up-to-Date Housewife has left him one loop-hole. He can still find entrance into our best families via—the dish water.

The following article by E. W. Elsom in a recent number of the Mother's Magazine, brings this matter very forcibly to the attention of the public.

While women have been keeping close tab on the sanitary and hygienic condition of their homes, watching the water and the milk supplies, and insisting on careful inspection of meat and other foods, they have to a large measure neglected to make any changes in their methods of dish-washing.

This neglect has occurred, perhaps, because so few women realize what an important part dish-washing methods may play in the spread of disease. Its effects are so hidden, so difficult to track back to their true source, that contaminated dish water often escapes any shadow of suspicion.

Every now and then, however, the facts of a startling case are unearthed, and we get some idea of what a leading role unclean dishes may play as germ spreaders. Not long ago an epidemic of typhoid fever broke out among the students in a Wisconsin town. Forty-three cases were reported, and several deaths resulted, before the epidemic was traced to its source—a "typhoid carrier" who was wiping dishes in a local restaurant.

Yes, you may say, that may happen in a public establishment, but in my own home, my own kitchen, there can be no danger.

But, just a minute! One woman, impressed by the facts of this epidemic, proceeded to make a careful study of dish-washing and dish-wiping in the home from a bacteriological standpoint.

The results of her investigations were interesting and startling.

She found that an ordinary dinner plate, as it leaves the table in the ordinary household, has on it anywhere from 30,000 to 90,000 bacteria, the average number being about 60,000. Most of these were harmless bacteria; still, if the plate were such fertile ground for harmless bacteria, it would make a rich culture for dangerous disease germs.

Next a long series of experiments were carried on, to learn how many bacteria were left on these plates after they had been washed. The dishes were washed in water of differing temperatures, and rinsed in lukewarm water, and hot water, and boiling water, and then the bacteria were counted under a microscope.

From the standpoint of the housewife the astonishing and significant fact disclosed is this:

The average dinner plate, when washed in lukewarm water and dried without rinsing, was found to have on its surface 250,000 bacteria, or almost five times as many as it had when brought soiled from the dinner table!

This statement may seem amazing and improbable; but a little thought will show that it is logical, and the result what might have been expected. What are the necessities for rapid bacterial growth? Warmth and food. And what does the housewife give to those bacteria when she puts a lot of dinner dishes in lukewarm dish water? Warmth and food!

Thousands of housewives are still washing dishes in water no hotter than they can bear their hands in. It is not hot enough to kill bacteria; in fact, it encourages them.

So they multiply and increase, and the dishes that are taken out of this water have on them five times as many germs as they had when put into it.

This source of danger can be eliminated from the household by the use of hotter dish water and the careful rinsing of dishes in boiling water.

An investigation shows exactly the relation of the temperature of your dish water to the number of bacteria left on your plates, and cups and saucers, and silverware. It shows that the hotter the water, the fewer the bacteria left alive, and hence the smaller the danger of the spread of diesase in your family.

It is not enough that your dishes merely look clean. The dishes used in these experiments came out looking bright and shiny and clean.

The experiment showed that the only way to have sterile dishes is to use boiling dish-water, and boiling rinsing water. In large institutions where a dish-washing machine can be used, this sterilization can be attained easily. In the ordinary household it is less convenient to use boiling-water.

But the housewife should take every precaution to have clean dishes on which to serve her meals. There are six rules by which one may achieve the maximum of cleanliness in dish-washing:

First: Carefully scrape all plates and platters before washing.

Second: Do not allow anyone recovering from any form of contagious disease to handle dishes during washing.

Third: Do not cough or sneeze while working with the dishes.

Fourth: Have the dish-water hot. Use a dish-mop.

Fifth: Rinse all dishes in boiling water.

Sixth: Use clean dish-cloths and dish-towels.

FEEDING THE YOUNG CHILD

Children's diet during hot weather between the ages of two and six deserves more attention than it receives. Many a child who was tenderly safeguarded during his second Summer is sadly neglected through his third. In planning a hot-weather diet for young children, a few fundamental principles must be remembered.

First—There is more danger of overfeeding than underfeeding in Summer. A child will thrive on from one-fourth to one-third less food in Summer than in Winter.

Second—Stale, fermenting fruits are as dangerous to the child of four or five as unclean milk is to a babe of nine months.

Growing children must have the food elements which build bone, teeth, tissue, muscle, and brain. Of meat, fish, eggs, milk, and cereal which serve this purpose, milk is most easily digested, therefore the child between two and six needs at least one quart of milk daily in hot weather.

For oatmeal and corn-meal mush, which create heat, serve rice, cracked wheat, hominy grits, farina, and tapioca.

In supplying meat, remember that a small quantity of very good meat, properly prepared, is far more desirable than a larger quantity of less nourishing meat. Stewed or boiled meat with thickened gravies is especially bad for children in Summer. Better serve meat every second or third day only, and let it be a chop or bit of steak carefully broiled. Poultry, boiled, broiled or roasted, and fish, boiled or broiled, may be substituted for beef or lamb. Neither pork, fresh or smoked, nor veal should be served to children in hot weather. Eggs may be served in moderation, soft-boiled, or poached.

But it is in the selection and preparation of vegetables for young children that most of us err. Here is a list of vegetables forbidden to children until they have cut their second teeth: Raw celery; raw or fried onions; radishes; cucumbers; raw, fried and baked tomatoes; cabbage, eggplant, pickled beets.

Creamed celery, creamed onions, Brussels sprouts, peas, string-beans, Lima beans, and asparagus tips are permissible. Tomatoes stewed for several hours, in an agate pan, sweetened slightly and thickened a little with barley or rice flour, grated breadcrums or crackers may be served occasionally. There is a difference of opinion concerning carrots, but the average specialist in the care and feeding of children permits young carrots if they are well cooked and thoroughly mashed with a little broth, not butter. Young beets can be treated the same way. For children, corn is one of the most enticing vegetables on the family dinner-table—and one of the least digestible if eaten from the cob. Here, however, the mother may compromise. Boil the corn on the cob in salted water for ten minutes; drain, score each row of kernels with a sharp knife, and with the back of the knife press out the pulp. Thus, freed of its indigestible hull, the pulp may be served with safety to a child as young as three. For children from four to six, corn may be grated from the cob and served as a pudding, with milk, egg, and salt.

Save all water drained from boiled vegetables and use for flavoring milk soups, which are fine Summer food for children. Allow one part milk and two parts vegetable water, and to each quart of liquid one heaping teaspoonful of flour and scant teaspoonful of butter rubbed together until smooth. This makes a creamy soup which children like.

Of all Summer foods, however, fruit has the most dangerous possibilities. If under-ripe, stale, or overripe, it causes fermentation. Only perfectly formed, fresh fruit is fit to eat raw, yet because Summer is the fruit season, all fruit seems desirable.

For children under six, cooked fresh fruits are always safer than raw. Only when the flesh of an apple is mellow and of rosy or creamy tint, sohuld it be eaten raw. Then it must be carefully pared and cored, and, for three-year-olds, scraped soft with a spoon. Pears, like apples, may be stewed and baked Peaches may be eaten raw if in perfect condition, and carefully peeled. Berries and small fruits should be rubbed through a coarse sieve, or, better still, stewed without sugar if sweet, or with very little sugar if tart. Children who eat strawberries must be watched carefully for after-effects. These delectable berries sometimes cause a rash which indicates a disturbance of the digestion or kidneys, in which case they must be stricken from the diet list.

Summer Drinks for Children

Fruit juices may be used as a Summer beverage. The best way to pre-

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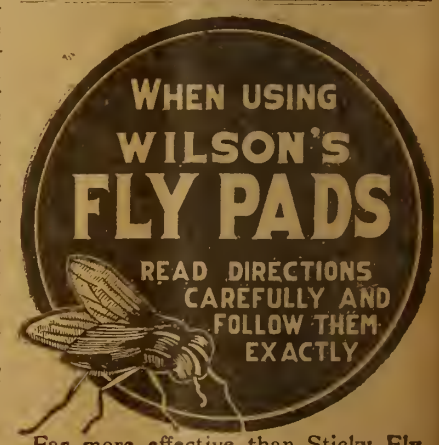
A MESSAGE TO WOMEN!!

If you are troubled with weak, tired feelings, headache, backache, bearing down sensations, bladder weakness, constipation, catarrhal conditions, pain in the sides, regularly or irregularly, bloating, sense of falling or misplacement of internal organs, nervousness, desire to cry, palpitation, hot flashes, dark rings under the eyes, or a loss of interest in life, write to me to-day. Address:
Mrs. M. Summers, Box 309 Windsor, Ont.



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VOL-PEEK

pare them is to cook the berries or fruits until tender, strain through a fine sieve or a bag of coarse cheesecloth, and return to the fire with sugar, allowing ¼ pound of sugar to 1 pint of fruit juice. Simmer fifteen minutes, skimming as for jelly, remove from the fire, bottle an set away in a cool dark place until needed.

Dilute according to the richness of the fruit and serve between meals in place of ginger ale, root beer, soda, pop and other soft drinks—made from unknown ingredients.

THE CHICKEN DINNER FOR NEXT WINTER

If you have a small flock, you can lay away your chicken dinner for next winter now. "Can the cockerels when it no longer pays to feed them. This will put on your pantry shelves material for the chicken dinner when poultry is scarce and prices high. The following directions are being supplied to boys' and girls' poultry clubs on "Canning the cockerels."

Kill fowl, dress at once, cool; wash thoroughly, draw, then cut into convenient sections. Dip into cold water to insure cleanliness. Place in wire basket or cheesecloth and boil until meat can be removed from bones easily. Then remove from boiling liquid to separate the meat from bones. Take the meat off in as large sctions as possible; pack hot meat into hot glass jars or enameled cans; fill jars with hot liquid after it has been concentrated one-half; add level teaspoonful of salt per quart of meat for seasoning; put rubbers and caps of jars into position. not tight. Cap and tip tin cans. Sterilize for the length of time given below for the particular type outfit used:

Water bath, homemade or commercial (quart jars).....3½ hours.
Water seal, 214 degrees.....3 hours.
5 pounds steam pressure....2 hours.
10 to 15 pounds steam pressure 1 hour.

Remove jars, tighten covers; invert to cool and test joints.

Caution.—Only the very best types of rubbers should be used.

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A HARMLESS FLY POISON

Mix thoroughly one-half cupful of sweet milk, one egg yolk and one teaspoonful each of sugar and ground black pepper. Spread on white plates wherever there are flies. When dry put out a fresh mixture.

A TIME-SAVER

Save time in preparing vegetables, by cooking such as parsnips and carrots with the skins on. When cooked you can peel them off very easily.

SCORCHED MILK

When heating milk for soup, if a small amount of butter be rubbed over the bottom of the stew-pan, the milk will not scorch easily.

BUTTER FOR BUMPS

Children are continually falling and getting bumped. If a little butter is applied as soon as it happens the flesh will not turn black-and-blue.

KEROSENE FLAMES

If fire is caused by upsetting a kerosene lamp, throw on flour, never water. The flour will extinguish the blaze; water only spreads it.

EMPTY SPOOLS MADE USEFUL

Keep all your empty spools and take them with you to the summer cottage. They are useful to slip over the nails used for hanging garments and will save you many a tear and rusty spot.

HOT-WATER BAGS IN YOUR SHOES

Cut pieces of rubber the size and shape of your shoe-sole from an old hot-water bag, slip them in your shoes, and they will be protection if the soles are thin.

"How do you do it?"

"Do what?"

"Work all day long with back bent over your crops—and return from the fields apparently fresh and vigorous for your chores."

"My father did it before me."

"I know that. But what is the secret? How do you do it? As for me I go to bed tired out and after a few hours' work in the morning, begin to wish I had never been born."

"Many years ago our family began to rely upon the advice of Dr. Chase. Away back in 1864 we managed to get a copy of his book. Since then we have had many copies. And each new book retaining all the virtues of the old, contains something new and valuable. Dr. Chase has kept our family posted on the progress of modern science as regards health."

"Humph! I have always looked upon Dr. Chase's remedies as patent medicines."

"The parts of your self-binder, of your mower, of your separator, and of all the machines you use on the farm, are patented. Does that make them less valuable? A thing is neither good nor bad because it is patented. USE ALONE PROVES VALUE. And thirty years of use has proven the worth of Dr. Chase's medicines to our household."

"There is something in what you say."

"There is more in what I am able to do, as a result of following Dr. Chase's advice. There was a time that my back bothered me so that I could not stand hoeing, pitching hay and such work but by using Dr. Chase's Kidney-Liver Pills as a regulator of the kidneys, liver and bowels, I got rid of backache and back weakness."

"Well that is just where my weak point is, in the back."

"Try Dr. Chase's Kidney-Liver Pills and if I don't miss my guess, you will soon be all right. We have found the occasional use of these pills the best means of keeping these organs regular and thereby avoiding pains and aches, as well as the development of serious disease."

"I will certainly give them a trial for I have often **wondered** how you have kept so well and fit."

Dr. Chase's Kidney-Liver Pills, one pill a dose, 25c. a box, at all dealers or Edmanson, Bates & Co., Ltd., Toronto.

HOUSEHOLD HINTS

At every meal, if necessary, preach the gospel of the clean plate.

Rye mush may be cooked in boiling salted water like any other cereal.

Matting that is soiled and does not respond to washing can be painted over with a coat or two of paint and look as good as new.

Lumpy batter is a sore trial to the housekeeper, but if she will mix the salt with the flour before wetting the latter, it will often prevent the lumps from forming.

Cleaning copper or brass isn't the most agreeable of tasks and once it is cleaned we should like it to stay clean if not indefinitely, at least for a long time. Your wish can be partly realized if you rub the polished metal with the beaten white of a negg.

Pecan nuts, as everybody knows, are not easy to crack so as to keep the meats even partially whole, but if boiling water is poured over the nuts and allowed to cover them for about twenty minutes or so you will find that the meats will not crumble and will come out in quite large pieces.

Beets, if they are red, add an attractive touch of color to the table, but if they have accidently lost their color they are not pleasing to the eye. In such an event, the beets may be made a brilliant red again if a little red fruit coloring is added to the vinegar.

Never throw away an old silk strainer. The holes can be plugged and it can be used for an ash tray.

Red ants will not eat nutmeg. It hurts their teeth.

MARKETS.

MARKET REPORT

Charlottetown

Beef Carcass 14c to 18c. Retail best cuts 22c to 28c.
Veal, Carcass 14c. Retail 16c to 20c.
Hogs, none.
Lamb, Carcass 30c. Retail 32c to 36c.
Mutton, Carcass 18c. Retail 22c to 24c.
Beef Hides, 16c lb.
Sheep Skins, 75c to $1.00 each.
Calf Skins, 30c lb.
Potatoes, old, $1.30 to $1.50 busel. New, $2.00 to $2.20.
Carrots, new in retail way only and impossible to give price.
Turnips, none.
Parsnips, none.
Oats, $1.00 to $1.05 for black; 90c to $1.00 for white.
Cornmeal, $4.25 to $4.40 per bag.
Bran, $2.15 to $2.20, very little available.
Oatmeal, $6.50 per bag, $13.25 per barrel wholesale.
Middlings, scarce, $2.40 to $2.50 per bag.
Cotton Seed Meal, none.
Oil Cake. $3.50 to $4.00 per bag as to quality.
Buckwheat, none.
Ontario Flour, $11.75 to $12.00 in bags, 20c higher in wood.
Manitoba Flour, $12.00 to $12.50 in bags, 20c higher in wood.
Chickens, none.
Fowl, none.
Turkeys, none.
Geese, none.
Butter, creamery, 42c to 48c.
Butter dairy, 38c to 42c.
Cheese, cheese board last meeting was 22¼c for whole cheese; this is the price the factory men received at their nearest station. The wholesale price to the retail trade is 23½c for whole cheese and 24c for twins. The larger retail stores and for shipment to the wholesale houses through the Maritime Provinces the price would range between 22½c to 23c for wholes with regular ½c extra for twins.
Eggs, 42c to 43c, wholesale prices to county shippers.
Hay, loose, 55c to 65c per 100 lbs., new; pressed, $1.00 per 100 lbs., old.

MONTREAL

Dairy Produce Trade

Montreal, Aug. 24.—The receipts of butter today were 242 packages, as compared with 25 for the same day last week, and 98 for the corresponding date a year ago. There was nothing new in the market to note today, business being rather quiet both in a wholesale and a jobbing way and prices were unchanged.

We quote wholesale prices as follows:

Finest creamery	43½c to 43⅜c
Fine creamery	43c to 43¼c
Finest dairy	38c to 38½c
Fine dairy	36c to 37c

The receipts of cheese today were 7,522 boxes, as against 7,443 for the same day last week, and 9,255 for the corresponding date a year ago. The tone of the market was steady with a good demand from exporters for all supplies coming forward. There was some business done in small cheese for domestic consumption at 22½c to 22¾c per lb.

The Dairy Produce Commission is paying the following prices:

No. 1 cheese	28c
No. 2 cheese	22½c
No. 3 cheese	22c

The Provision Market

Montreal, Aug. 24.—The feature of the live hog situation was the weaker feeling which developed at other Canadian markets yesterday owing to the indifference on the part of packers as to supplies and in consequence there was little or no competition for the offerings, consequently prices at the Toronto market dropped 75c per 100 lbs., with sales at $19.75 per 100 lbs. weighed off cars, and at $19.50 fed and watered, and at Winnipeg prices also declined 75c per 100 lbs., with sales of selected lots at $19.25 per 100 lbs. weihed off cars. This naturally created an easier feeling in the market today and prices were 50c per 100 lbs. lower, the top figure realized for selected lots being $20 per 100 lbs. weighed off cars. There was no change in prices for dressed hogs, but the tone of the market was easy in sympathy with the above. The demand for small lots was steady and sales of abattoir fresh-killed stock in a wholesale jobbing way were made $29.50 to $30 per 100 lbs.

A fairly active trade continues to be done in most lines of smoked and cured meats for local and country account and as supplies of such are not in excess of the daily requirements, the tone of the market remains firm and prices are unchanged. In a wholesale jobbing way sales of 8 to 10-lb hams were made at 37c to 38c per lb., 12 to 15 lbs at 35c to 36c, and heavier weights at 34c to 35c, while breakfast bacon sold at 41c to 42c, Windsor selected bacon at 45c to 46c, and Windsor boneless bacon at 48c to 50c. There was no change in prices for barreled pork, but the trade was quiet with car lots of Amercan bean pork quoted at $43 per barrel duty paid, clear sort cut pork at $49, and clear cut back pork at $59.

A steady trade continues to be done in lard in a wholesale jobbing way and the market is moderately active with no change in prices to note. Sales of Canadian pure lard were made at 32c per lb. in 20-lb. wood pails and at 33c per lb. in 1-lb. blocks, while American compound lard sold at 27c to27½c per lb. in 20-lb. wood pails.

Chicago, Aug. 21.—In the dull atmosphere of the provision pit a little profit taking was sufficient to offset demand from scattered commission houses. Future quotations were:

	High.	Low.	Close.
Mess pork, per bbl.—			
Sept.	$44.20	$44.00	$44.10
Oct.	44.60	44.40	44.50
Lard, per 100 lbs.—			
Sept.	26.82	26.72	26.72
Oct.	26.87	26.82	26.82
Short ribs, per 100 lbs.—			
Sept.	25.02	24.90	24.90
Oct.	25.25	25.10	25.10

Cash prices closed: Pork, nominal. Lard, $26.62½. Ribs, $24 and $25.

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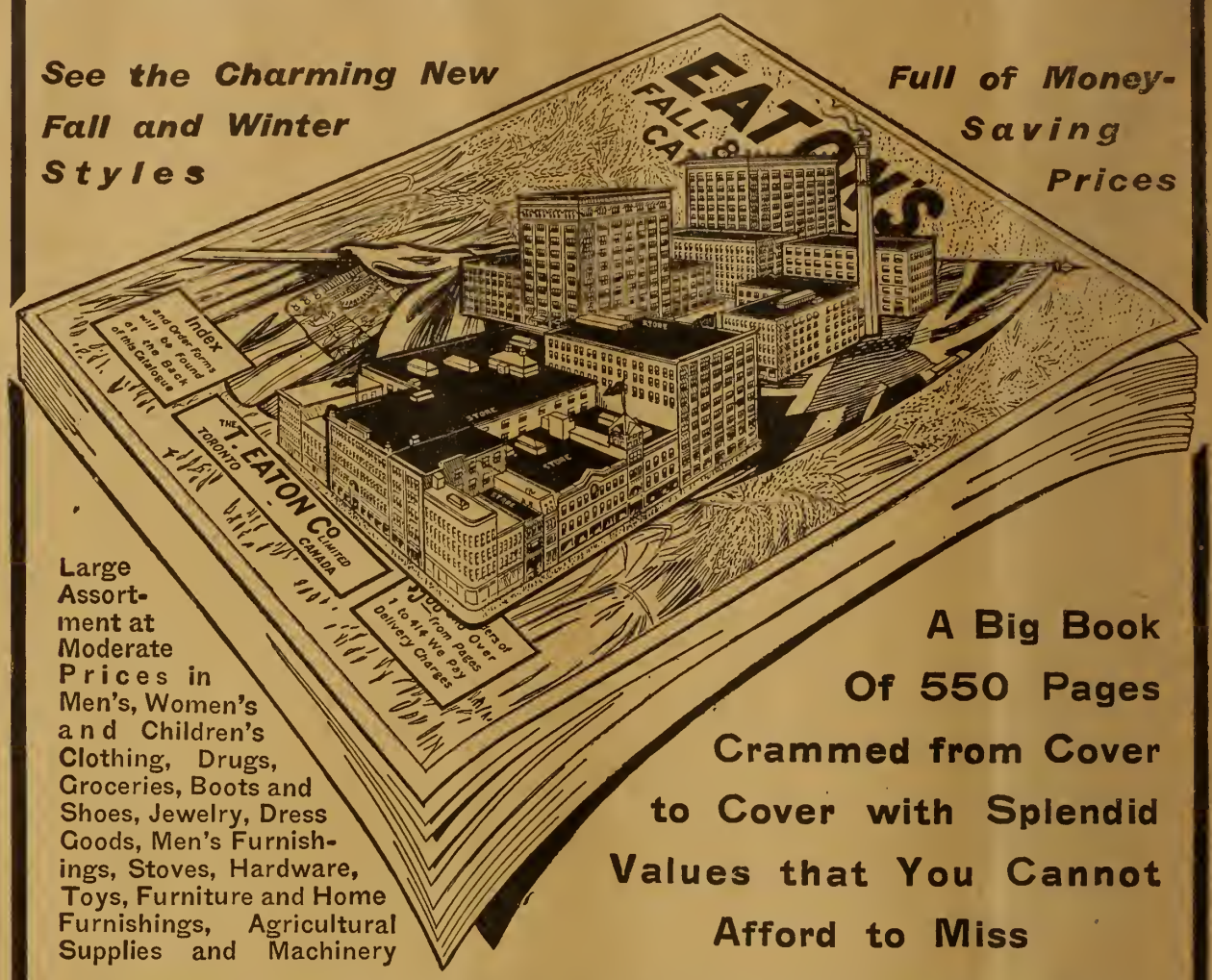

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Greater Production is the slogan of the Farmer today. How to achieve it with reduced man-power is his problem. Improved Power Farm Equipment is the Manufacturers' answer.

Bring your Ladies.

The tractor won't be the whole show. Lighting plants, Threshing Machines, Grain Separators, Milking Machines, Power Silo Machinery, Water Systems, Tractor Plows Dairy Equipment, and many other lines of Belt Power Apparatus designed to lighten the burden of the Farmer and the Farmer's wife, and increase their productive power, will be exhibited.

Hours spent at Cobourg will mean DOLLARS in your pocket and MORE FOOD for our Soldiers.

COUNTRY PRODUCE

Montreal, Aug. 24—There is little change in egg prices, the trade paying from 41c to 45c delivered, with circles receiving up to 47c f.o.b., shipping point. One sale of two hundred cases is reported from Toronto at 45½c delivered. Some consumers in Montreal buying in twelve and thirty-dozen case lots are paying 50c f.o.b., shipping point, to producers. One retailer is paying 50c to 55c to producers. The demand for high grade stock continues and jobbing prices on extras and No. 1's are firm.

The western market is firmer in Winnipeg, and there is in Alberta a slight increase in receipts. The weather is reported to be cooler, and more favorable to production. In the Maritime Provinces production has fallen off, but conditions are favorable to the young stock, which is reported to be vigorous, and growing rapidly.

The car-lot movement from the west continues, three cars now rolling east from Winnipeg. The price on such shipments ranges around 42½c to 43c f.o.b., Winnipeg. All car-lot shipments have been inspected and between May 28th and July 30th, eighty-four cars have moved in inter-provincial trade, all these (1,109,040 dozens) being produced in the three prairie provinces. These eggs have moved to the larger consuming centres, viz.: Montreal, Toronto, Sudbury, Fort William, Sault Ste. Marie and Hull in the east, and Calgary, Vancouver and Victoria in the west. These have been for the most part fresh gathered, but some cars of storage firsts have also moved.

During the past week the sale of two cars of May storage stock at 45c, storage charges paid, is reported from Toronto. In parts of the west the lower grade storage stocks are being drawn on to help to meet the local consumptive demand.

A firm feeling prevails in the local egg situation and prices show no change. The demand today was quieter from local buyers and in consequence the volume of business was smaller, but on the whole the movement was fair. The receipt today were 736 cases, as compared with 928 for the same day last week, and 1,447 for the corresponding date a year ago.

We quote wholesale prices as follows:

Selected new laid eggs.....51c to 52c
No. 1 stock.....47c to 48c
No. 2 stock.....45c to 46c

Poultry.—Light receipts of poor quality is reported from Winnipeg, and this also applies in Eastern Canada. In Montreal and Winnipeg packers are reported crate feeding. Prices are practically unchanged from those quoted a week ago. Receipts continue heavy on the Edmonton market and are reported to be increasing on the Vancouver market. In Saskatchewan a few dressed fowl are reported arriving on the Moose Jaw market, but no surplus for storage is in sight.

In the United States the poultry markets are steady, and in New York a partial settlement of the Hebrew chicken killers' strike brought the live poultry market once more on a normal basis. The slaughter houses have to pay killers two cents a head.

New York, Aug. 21.—Eggs irregular. Receipts, 19,147 cases. Fresh gathered extras, 49c to 50c; fresh gathered, regular packed, extra firsts, 46c to 48c; do firsts, 42c to 45c; state, Pennsylvania and nearby western hennery, whites, fine to fancy, 66c to 68c; state, Pennsylvania and nearby hennery, browns, 52c to 55c; do. gathered, browns and mixed colors, 38c to 50c.

The Prince Edward Island Exhibition and Horse Races

---AT---

Charlottetown, Sept. 24 to 28, 1918

OPEN TO ALL CANADA. OVER $10,000 IN EXHIBITION PRIZES

Live Stock entries, except Poultry, close 13th September. All other entries close 17th September.

Five days Horse Racing, Ten Classes, $4,100.00 in Purses.

Special Attractions in front of the Grand Stand.

Nearest Station Agents will give particulars of rates.

For Prize List and all information write the Secretary.

FRANK R. HEARTZ, President. *C. R. SMALLWOOD, Sec'y-Treas.*

VALUE OF GOOD ROADS

(Continued from page 713)

road money that is spent on roads is spent on maintaining dirt and similar roads that are altogether impassable. In the light of Canada's resources and the part they will play in the social and material welfare of her people, it will be criminal to let them go to waste or remain unused because of impassable or inefficient roads. The need for good roads is tantamount with the need of most any other improvement in the country and petty objections to their construction are not patriotic. It is a comparatively easy matter to prove that this war is a contest in transportation, and it is equally certain that the future peace time struggle to reclaim industrial freedom lies along the routes where transportation of the country's products are made easy; for these products only become an asset when they are made available through speedy transportation.

THE SHEEP BARN ON FARM THAT IS INEXPENSIVE AND LEADS TO GREATER PROFITS

To realize the attractive possibilities of keeping sheep, a farmer must give each animal a favorable opportunity to live in health and comfort by supplying the necessary buildings and equipment. Sheep raising has passed the period of speculative possibility and is rapidly coming into its own in Canada, chiefly owing to the place it is assuming as a business proposition, encouraged by the increased high prices of mutton and wool. But there are other points to be weighed in keeping sheep. Not only may they be used to utilize so called waste land, but they convert into mutton and wool much material that cannot be utilized by other animals. Weedy cattle pastures into which sheep have been turned have been found to carry the sheep and an added number of cattle after the weeds were destroyed and the grass given a fair chance for growth.

Shelter for Sheep.

Contrary to general opinion, sheep as well as any other class of farm animals require clean, dry shelter. It is especially important that the feet and fleece be kept dry. If their quarters are dry and clean, sheep will stand very cold weather without discomfort or disease. There must be ample ventilation, for sheep if closely crowded sweat badly and quickly use up the oxygen in the air, but there must be no drafts, for contrary to averae opinion, sheep are very subject to colds. In the ordinary climate the sheep barn may be constructed of one thickness of matched boards. It should be large enough to avoid crowding. Windows enough to permit lots of sunshine to enter, and clean, dry bedding under foot are necessities. The lambing pens should be of warmer construction than the general shed. This roughly outlines the suitable conditions necessary around the sheep barn or shed to ensure full success to the farm flock.

The Sheep Barn

If a new site has to be made for the accommodation of the flock, choose, if possible, high ground and well drained for the building and yard. The yard must be of such a character that it will dry up quickly after rain or thaw. A sheep barn, so long as it is waterproof, dry and roomy, need not be expensive. There are on many farms to-day, buildings and sheds that are not serving any real purpose that could be readily fixed up to shelter the ewes during winter and lambing time. To arrive at the size of the building necessary for the number of sheep on the farm, it can be calculated from the basis of giving 12 to 15 square feet of floor space to each animal. Thus a building 25 feet long by 12 feet broad has an area of 300 square feet floor space, and to give each animal 12 to 15 square feet floor space, the building would accommodate 25 to 30 sheep.

In remodeling an old building, the first duty is to see that its surroundings and floor are well drained and that it can be well appointed with windows to admit the sunshine. If the boards that make up the walls of the old building are open and liable to make the place drafty they can be lapped over with cheap lumber in a way to make it comfortable. If possible the front should face the South, with a large commodious yard on the Southern side. The floor of the building should be well drained, under-drained if at all possible and finished wtih cement or clay if situation is perfectly dry. If it is to be made of clay, the soil to the depth of five or six inches should be cleared away, and its place filled with broken stone or gravel, then the clay may be laid on and firmly packed. When the situation is naturally dry, the clay floor will be found a very comfortable one.

The Barn's Equipment

In no case is it advisable to have a pen larger than will accommodate 20 or at the most 25 ewes. If a farmer has a flock of 30 or even 25 ewes he will find it more profitable to arrange them into two pens. The pens for fattening lambs should be made even less in size than ewe pens. When sheep, that are in for fattening, are arranged in pens of fewer animals in each pen, they will come along faster toward finishing for market, and will economize feed better than when herded in larger numbers.

The lambing pen should be fixed with a number of movable partitions, and each ewe as she lambs should be given a pen to herself for a week or so. Small pens or creeps for the young lambs should also be arranged so that young lambs may be trained to eat a little extra feed. These pens should be so arranged that the lambs can enter them at any time. The doorway to the lamb creep must be made as small as will keep the ewes from entering.

Doorways, both outside and inside of the sheep barn, must be made wide. Narrow doors are apt to hurt the in-lamb ewes when they may chance to be hurried or eager at feeding time. The lower half of all sheep doors should be divided in two, and made so that they can swing either way.

All feed racks must be on a level with the body of the sheep. If hay is arranged above their heads, the sheep will fill their fleeces with seeds and other foreign matter that deteriorates the value of the wool. The racks should be made to give at least one foot of feeding space to each sheep. It will also be found to be of advantage to have the feed rack movable. A feed rack should not be made of larger size than will accommodate 20 sheep. The top part of the rack is arranged to hold the hay or roughage, and the lower part fixed so that the grain feed can be served, being a box extending the whole length of the rack. This feed rack is made in two parts, the part that holds the hay can be separated from the box or grain feeding arrangement. The accompanying plan and elevation of the feed rack for sheep will give a better idea as to its construction. The rack shown is 10 feet long, which will accommodate at feeding time about 20 sheep if they are of small or moderate size, but only 15 to 18 ewes when heavy with lambs. The feed rack should be made so that it can be carried to the ward or field and doors of sheep pen arranged to give ti free and ready passage when being moved.

Never forget to have a watering trough; sheep must get water in the winter time. There is more failure due to this neglect than many farmers ever realize. The severe winters of Canada make this duty rather difficult, but some way must be found to overcome it. Watering troughs must be kept clean; as high as the sheep so that they will not dirty the water, and made of material that will not go to pieces, if by any chance they should get frozen.

"STANCO" TRADE MARK REG.

CANADIAN PAINTS

Strictly Pure White Lead in Oil Govt. Standard

Boiled & Raw Oil, Turpentine, Dry Colors

All Guaranteed under "STANCO" Canadian Label

A special paint for every purpose, and a choice of 32 shades are available in the high quality "STANCO" Canadian Paints.

Ready Mixed

For inside or outside work, here is a paint that is unsurpassed. Canadian made from start to finish, STANCO Paint is greatly in demand among particular painters.

Insist on "STANCO" at your paint shop. 5

STANDARD PAINT CO., OF CANADA, Limited

MONTREAL TORONTO WINNIPEG VANCOUVER

ENTERPRISE

Warm Air

Blazer Furnace

Everything that a furnace ought to be—scientifically correct in principle, convenient and economical in operation, constructed to last a lifetime, reasonable in cost of installation and guaranteed.

Write for free booklet containing much valuable information.

THIS BOOKLET FREE

15

Enterprise FOUNDRY CO. SACKVILLE, N.B.

PREPARING FOR HARVESTING AND THRESHING

At harvesting and threshing time nothing should be allowed to interrupt the work of getting the grain into the granaries. Preparedness is half the battle.

When a decision has been arrived upon as to the amount of grain to be sown, order the binder twine, allowing from three to four pounds per acre.

Overhaul the binders thoroughly, tighten all nuts, see that knotter and carrier, etc., are all in good working order and oil thoroughly.

When using the binder try to deposit the sheaves in straight lines. This will greatly reduce the time and labour in stooking and subsequent loading of waggons whether it be by hand or sheaf loader.

Repair waggon-racks, boxes and sheaf loaders.

The engine wants overhauling. Secure all fittings and tighten the nuts, renew the batteries if they do not test high enough and overhaul the wiring and spark plugs. Lay in an adequate supply of gasoline and lubricating oils. See that the belt is in good order and, if necessary, oil it and apply resin to prevent slipping.

The separator, to produce a clean sample of grain, must be in good working order, so clean it thoroughly, remove all tufts of beards and chaff so that there will be an even distribution and movement of grain over the sieves. See that the fan is working properly. Have the knives sharpened so that each sheaf may be cut properly. Tighten all nuts and fit the belts and lubricate all the bearings.

Plan to have as few settings of the separator as possible and off the fields to prevent spreading weed seeds.

Where the threshing is done by several settings a large patch of weeds follows at each place and it has been estimated that from three to five bushels of grain are lost. This loss, however, may be greatly lessened by using a canvas under the feeder.

A farmer who does not possess a threshing outfit of his own would do well to stack his grain, for then it will not be at the mercy of the weather should threshing be delayed.

W. H. GISBON,
Superintendent, Experimental Farm,
Indian Head, Sask.

ROGUEING OF FIELDS OF GRAIN

The verb "to rogue", meaning to remove foreign or undesirable types, has not yet come into general usage and the operation to which it refers is perhaps still less known. The high standard of purity set for the seed grain disposed of from the Dominion Experimental Farms makes it sometimes necessary to rogue quite large fields, even up to twenty or twenty-five acres in extent, but such an extensive operation is not advisable for ordinary farmers or seed growers. Nevertheless, even in these times when th cost of labour is so high, many farmers who expect to sell part or all of their grain crop for seed purposes, cannot afford to neglect altogether the rogueing of some of their smaller fields. In the threshed grain, it is practically impossible to separate barley from wheat and quite impossible to separate barley from oats. In a field of wheat or oats, however, when the barley has headed out, it is a simple matter to remove all the plants, provided, of course, the seed sown was not very seriously mixed.

If the principal fields which the farmer is growing are too large to be rogued, as will generally be the case, the smaller, multiplying fields (which should usually consist of only about one or two acres each) should be gone through carefully two or three times at intervals of a week or more, between heading and harvest, in order to remove all plants of other kinds of grain and any abnormal plants observed of the variety which was sown.

If the seed used by the farmer was pure as to variety, there is usually no need to attempt any form of selection. Any very unusual or peculiar heads which are observed should be removed; in other words, the grower should devote his attention to selecting out and rejecting everything abnormal found in his field. This is a much more rapid and, in some ways, even a better process than the laborious plan of picking out the seed which is to be retained.

By rogueing every year the special, small, multiplying fields of pure seed, which every grower should have, much time and waste of good seed can be avoided when cleaning the threshed crop in the fanning mill, and the higher degree of purity of the seed grain which the grower will be able to offer for sale will enable him to command a higher price.

The hand picking of a few bushels of seed grain in the winter months is desirable but this operation cannot altogether do away with the necessity for very careful inspection and occasional rogueing of the smaller fields in midsummer.

CHAS. E. SAUNDERS,
Dominion Cerealist.

In these times when there is a marked scarcity of male labor, and production of foodstuffs is so much called for, there is no more advantageous and healthful manner in which women and children can be employed than in the care of poultry.

Buttermilk is equal to skim milk for feeding hogs, while whey is half as valuable. Whey, being low in protein, is not well suited for young pigs and should be fed to older animals.

What Will You Do For Help?

FARM help is scarce, but this condition can be relieved to a marked degree by using machines that accomplish more work in a given time with less man power.

Why should the farmer cling to horses—a slow, expensive means of power—when every other business is adopting the truck and thereby reducing the cost of hauling, speeding up deliveries, and saving for human needs the food that the horses would otherwise consume?

The motor driven truck can work constantly at maximum load under the burning summer sun, or in the coldest weather. Unlike the horse it needs no rests while working, it eats only while in actual use, and when the day's work is done it requires very little attention, and leaves you free for other "Chores" about the place. Then, it can be housed in one-quarter the space of the horses, wagon and harness it replaces.

It is a mistaken idea that a truck is useful only for driving upon paved roads. The Ford can be driven all over the farm, and used for hauling grain, potatoes, fruit, roots, fertilizer, wood, stock, milk or any other product. The speed it travels, the time it saves, and its low upkeep cost appeal very strongly to all users of the Ford Truck. If you need help, order your Ford One Ton Truck today.

Ford
THE UNIVERSAL CAR

One-Ton Truck	$750
Runabout - -	575
Touring - - -	595
Coupe - - -	770
Sedan - - -	970
Chassis - - -	535

F. O. B. Ford, Ont.

All prices subject to war tax charges, except trucks and chassis

Ford Motor Company of Canada,
Limited
Ford - - Ontario

BREEDING

Veterinary obstetrics deals with the care of domestic animals during pregnancy, the birth of their young, and the treatment of the young after birth. Perhaps no phase of veterinary practice is so little understood by farmers and stockmen generally, nor one which a little knowledge and practice are productive of such good results. The period of heat varies in different animals about as follows:

Mare, once in three weeks.
Cow, once in three weeks.
Ewe, once in 16 days.
Sow, once in three weeks.
Bitch, once in six months.

The above periods are the average time that elapses from one period of heat to another. The milk secretion, if the animal is giving milk, is usually lessened during the heat period.

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany eacb order and advertisement must have address on. as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind will be allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

PICKLING ONIONS FOR SALE.—H. E. GOLDING, Sussex, N. B.

FOR SALE—Pure bred Yorkshire pigs. July litter. Also one cow, freshens Nov. 1st.—DAVID F. FISHER, Long Creek, Queens Co., N. B.

WANTED TO PURCHASE a number of hives f hees; state price and particulars to C. HOGAN, Church St., Greenwich, Kings Co., N. S.

FOR SALE—Registered Ayrsbire bull, No. 48032. Dam 31884 C.R.R. Also several registered bull calves.—E. CHADDECOTT, Monkham's Farm, West Merigornish, Pictou Co., N. S.

FOR SALE—A nice bunch of pure bred Hampshire Lambs Apply to GEO. R. WARD, West Bathurst, Glouc. Co., N. B. R. R. No. 1. Phone No. 84-6.

FOR SALE—Some real good Jersey bulls and Berkshire hoars, ready for heavy service. Also some youngsters. All registered stock.—J. R. SEMPLE & SON, Truro, N. S.

LADIES WANTED to do plain and light sewing at home, whole or sparc time, good pay, work sent any distance, charges paid. Send stamo for particulars. NATIONAL MANUFACTURING COMPANY, Montreal.

A RANCHER'S LIFE in Canada and Guide to Rural Industries, fruit growing, poultry keeping, ducks, geese, turkeys, pigeons, hares, goats, bees, flowers, etc. 25c post paid. By C. H. PROVAN, Langley Fort, British Columbia.

FOR SALE—One Type C Motor Hay Press, I.H.C., mounted, self-feeder, in perfect working order, only been used a little. Will sell for less one-half the price of a new one. For particulars apply to G. E. STEEVES, Hillsboro, N. B.

ATTENTION—Save money. War time. Get my formulas for making the following Toilet Powders, Florida Water, Bay Rum, White Liniment, Marvelous Ointment, Hair Perfume Oil, all for 25 cents postpaid.—ALLEN NOUVEAUTIE. St. Zacharie, Que.

AGENTS WANTED—$1000—You can make it in your county with our fast selling Combination Cooker. One salesman banks $388 55 the first month. Another agent sells 20 in two hours. Otbers cleaning up $10 daily. No capital necessary. Goods shipped to reliable men on time. Territory going fast. Write quick to secure your field.—COMBINATION PRODUCTS CO., Foster, Que.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls. ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females. all ages.

McINTYRE BROS.
SUSSEX. - - N. B.

Pure Bred Poultry

Barred Rocks, White Wyandottes, White Orpingtons, White and Brown Leghorns, White Crested Black Polish Choice breeding stock from good laying strains for sale. Cockerels, $2.00 each. Special prices on pairs, trios and pens during Aug. and Sept.

H. M. McMONAGLE
FREDERICTON - - - N. B.

EGGS FOR HATCHING !

Breed Standard bred poultry and more of it. Eggs or stock from every popular variety can be had through our Association.

Eggs from all heavy breeds such as Bramahs, Plymouth Rocks, Wyandottes, etc., $2.00 for 15 eggs.

Eggs from the lighter breeds such as Leghorns, Minorcas and Black Spanish, etc., $1.50 for 15 eggs.

Write us your Poultry wants.

Cumberland Co. Poultry & Pet Stock Association
E. F. McKIM, Secretary
Amherst - - N. S.

RIGHT WAY TO MILK

The right way to milk is to grasp the teat firmly in the whole hand far enough up that the fingers will not get wet when the milk begins to flow. Lift the hand, opening at the same time that the hold on the teat quite loose. Beginning with the thumb give a gentle pressure or squeeze on the teat, causing the pressure to come all the way down the teat. With a little practice this becomes habit. To milk cross-handed is probably the best way as one has more room, that is milk the right front and left hind teat at the same time. The good milker is on the lookout for a kick from the most gentle cow.

BREEDERS' DIRECTORY

Our charge for Inserting names In this Directory is $2.00 per year for each line under each heading. Money must he paid strictly in advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B'

Ayrshire Oattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co,, N. S.
C. A. Archibald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Chaldecott, Monkbam's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son. Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archibald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

FRUIT PACKAGES

The fruit season is again drawing near. how about your boxes and crates for the coming season To pack and ship to the best markets, you require the best standard packages, which can be had by placing yopr orders early with the

Hantsport Fruit Basket Co'y.
HANTSPORT, N. S.

Shetland and Hackney Ponies

Best blooded ponies in America.

Breeding and show stock, and ponies for children's use supplied.

Ponies shipped by express in strong crates.

MOUNT VICTORIA STOCK FARM
T. B. Macaulay, Proprietor. J. E. Chandler, Manager.
HUDSON HEIGHTS, QUE.

FOR SALE!

One No. 50 Bell Ensilage Blower in perfect working order, has only been used a little. Will sell for about one-half the price of a new one. For particulars apply to

P. L. MORSE,
Berwick

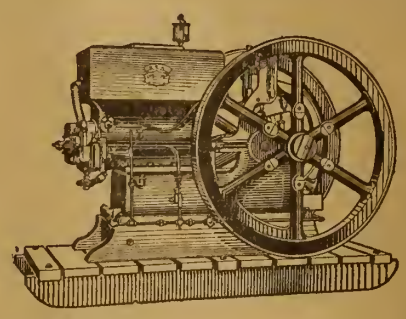
Advertise it in the Farmer.

Brantford Gasoline and Kerosene Engines

Stationary or Mounted

An Engine for Every Need

Kerosene Traction Engines



We Manufacture Complete lines of

Wind Mills, Grain Grinders, Wood Sawing Outfits, Pumps, Tanks, Water Boxes, Concrete Mixers, Power Spraying Outfits, etc.

Agents Wanted in Unrepresented Territory

GOOLD, SHAPELY & MUIR CO., LTD., BRANTFORD, ONT.
A. McCAUSLAND, Victoria Hotel, St. John, N. B., Maritime Representative

FOR SALE !

In Shorthorns we have to offer a number of roans, reds and whites in both males and females, from young calves up. It would pay those wishing to purchase to come and see our stock before doing otherwise.

Our spring litters of Berkshires are all sold. Are expecting several summer and fall litters. Parties wishing to purchase please get in touch with us.

L. M. ANDERSON, Sackville, N. B.

QUALITY BRAND
Rabbitry and Poultry Yards

Amherst, Nova Scotia
E. I. PEEL & SON, Proprietors

Breeders of pedigreed Hares, White Rock and White Leghorn Fowl.

Black Siberian Hares, the most profitable fur bearing animal living, price per pair..$25.00
Silver Siberians, price per pair..... 5.00
Belgians, price per pair 3 00
The above prices apply to stock under 3 mos. old
Day-old White Leghorn Chicks, price 25c each.
D. W. Young's stock, as good as money can buy.
White Legborn 260 egg strain, for hatching.....$2.00 per 15
White Leghorn, No. 1 exhibition stock for hatching.....$4.00 per 15

We Guarantee Safe Delivery. Terms Cash with Order

AYRSHIRES BULLS !

fit for service, bred from heavy producing stock.

FRED S. BLACK & SONS,
Springvale Farm,
AMHERST, - - - N. S.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
Truro, - - Nova Scotia

Willow Glen Shorthorns !

Thanks to Maritime Farmer Advertising I have disposed of the following individuals from my show herd: 1st Prize 3 year old cow; 1st Prize 2 year old heifer and 1st Prize Senior Heifer to J. M, Laird & Son; 1st Prize Junior Heifer to D. C. McNutt, all of Prince Edward Island, and 1st Prize Bull Calf to Roy B. Pipes, Amherst, N. S. All my bulls are sold. I still have a few heifers for sale, sisters and dams of prize winners.

A. N. GRIFFIN,
New Mines - - - N. S.

FOR SALE

50 Rose and Singe Comb R. I. Red Chickens, May hatched, about ½ cockerels. I must dispose of them before Oct. 1st, so make me an offer for the lot.

Write for particulars

W. H. HENRY
Shubenacadie - - - N. S.

Newburn Hill Stock Farm

Our present offering is one pure bred Shorthorn Bull, 11 months of age, also a few Heifers from one to three years of age. All of good milking qualities.

Beef, Hay and Potatoes in car lots.
Choice Cultivated Strawberries a specialty
FRANK C. FAWCETT,
Successor to Bliss M. Fawcett,
UPPER SACKVILLE, N. B.

Butter Parchment at Farmer Office

UNIVERSITY OF ILLINOIS
URBANA

"The"
MARITIME FARMER
AND CO-OPERATIVE DAIRYMAN

Agricultural Reading Room
College of Agriculture
E Davenport, Director
Urbana Ill.

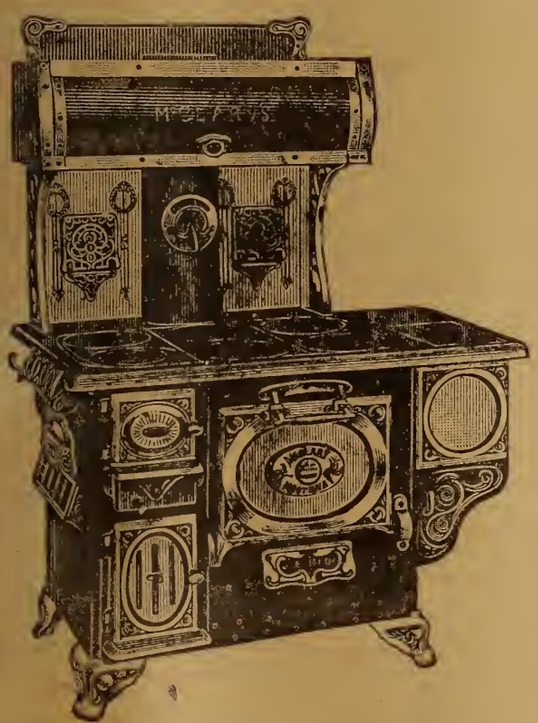
REGISTERED TRADEMARK

Published Twice-a-month in the Interests of the Farmers of the Maritime Provinces of Canada

Vol. 24 SUSSEX, N. B., SEPTEMBER 10, 1918 No. 23

The Four-Way Range Test

1. Ease of Management
2. Economy of Fuel
3. Performance
4. Durability



By these four vital range tests the Kootenay Range is made and sold.

When you buy a range be sure it will stand up to these tests.

The Kootenay system of dampers, checks and drafts is so simple that heat control is literally at your finger tips.

The duplex grates work so easily you hardly notice the effort of operating them.

The burnished steel-like top and the nickelled oven reduce cleaning to a mere dust-cloth operation—these all make the Kootenay easy of management.

The wide, deep fire-box, with ample vents for oxygen, for complete combustion, thus extracting all the heat from the fuel; the quick distribution of the heat to its work; the complete control of the heat—all these save fuel—make the fuel economy.

And the roomy, sanitary oven encased in a complete insulated envelope of heat; the tell-tale thermometer that indicates the exact condition of the oven, and again, the easy, thorough heat control by which you make the heat do exactly what you want it to do, when you waht it and where you want it—those are the tests for performance.

Also many years of use have proven that the Kootenay lasts a life time with ordinary care. It is strong where it should be strong, and scientific construction, with minute care in fitting, make it immune from cracking and breaking so common in old style ranges. Those are the tests by which McClary's ask you to judge and by which to buy.

"Service in the Kitchen"—Booklet Free

These are only a few of many features of the Kootenay Range described in a beautiful little booklet, "Service in the Kitchen," which will be mailed free on request. It tells all a woman wants to know about a range before she buys it.

London
Toronto
Montreal
Winnipeg
Vancouver

McClary's
Kootenay
Range

Calgary
St. John, N. B.
Hamilton
Edmonton
Saskatoon

CONSERVING MOISTURE FOR 1919 CROP

Moisture is one of the main controlling factors in crop production in the prairie provinces.

Three methods of conserving moisture are:

First, to have the ground in such a condition that the rainfall will soak down and not run off.

Second, to keep the surface of the soil sufficiently fine and loose that the upward movement of the water is checked two or three inches from the surface and held there.

The third method of conserving moisture is to destroy all weed plants on cultivated ground.

Most farmers summer-till a part of their farm with two objects in view, to store up moisture and destroy the weeds. Experiments on the Scott Station have shown that early plowed summer-fallow will store up more moisture and give heavier crops the succeeding year than late plowed fallows. Plowing the midle of May has given three and two thirds bushels more wheat per acre than plowing in July. June plowing has given two and two-thirds bushels more than July plowing. This increased yield from early plowing is due to not only storing more moisture, but to less loss of moisture from weed plants, that grow up on the late fallows.

It is sometimes thought that plowing down a crop of weeds will have manurial benefits. Experiments conducted have shown that there is not only a loss of moisture due to the weeds using it, but it is difficult to cover the weeds and make them decay in a reasonable time. Then, too, the ground is left in a more open condition, permitting drying out. Experiments at the Scott Station have shown that plowing down green crops such as peas and vetches does not give as good returns as does incorporating barn-yard manure into the soil.

Early plowed summer-fallows, well cultivated with the duck-foot cultivator will mean an increase in yield, and the frequency with which the land is summer-fallowed and the number of weeds present will be determining factors in regulating the amount of cultivation necessary.

It might be pointed out that where summer-fallowing alternate years is practiced, and there is a reasonable amount of moisture, the land will not stand the same amount of cultivation that land will that is only summer-fallowed once in three or four years. Especially is this true in the northern districts where early autumn frosts prevail.—Experimental Farm Note.

ELEVEN MILLION DOLLARS PER ACRE

There are eleven mililons dollars worth of nitrogen, the most important plant food, in the air over each acre. There are two ways of tapping this wonderful source of wealth. One is by the use of certain expensive machinery which can only be run successfully where cheap power is available. The other method is by raising certain bacteria that can take this nitrogen from the air and put it in the soil in a condition that the plant can use. These bacteria live on the roots of alfalfa, clover, peas beans and the other plants of this family. So that it is necessary to grow these crops if one wants to raise the bacteria that have the power of converting the wonderful source of wealth in the air into available plant food in the soil. The alfalfa, clover, peas and beans, etc., also produce the most nourishing foods for man and beast.

PEAT AS A FERTILIZER

Some 3,000 acres of "river bottom" peat in Illinois are being transformed into fertilizer with good results. The peat is excavated by a dredge and is left lying on the banks of the small canal to dry out partially for a day or two. It is then hauled to the mill, placed in a compost pile under a shed, and allowed to cure for a week or ten days. It is next fed into a dryer in the form of a huge six-foot revolving cylinder heated to a temperature of 1,700 degrees Fahrenheit. About thirty minutes are required to remove the last vestige of moisture from the peat, after which it is ground and screened to 36 mesh. After being ground it is in the form of a dark brown powder, without odor and so clean that it may be handled without causing the slightest smut or stain.

In addition to its value as a fertilizer it has been found that the peat in this form also possesses considerable merit when used as an ingredient in the composition of feed mixtures for cattle, particularly in the case of molasses mixed feeds, such as barley, wheat bran, screenings, ground corn and oats, to which molasses is added. Besides possessing nutritive (?) qualitie sof its own, the peat, being a good absorbent, prevents the other materials from being sticky as would be the case if no peat were used. The peat acts on the rough acid in the molasses, so that cattle when on full feed do not scour so readily. Experiments made with such a amixed food show that ctatle fed on it have better appetites and take on fat more rapidly, because, beiing in better condition, they eat more feed than they otherwise would.

BROKEN GLASS

When glass is broken do not try to pick up the little pieces with the fingers, but lay a wet woolen cloth on the floor where the fragments are and pat it. The tiny particles will adhere to the damp cloth, which may then be burned.

Sheep on Every Hill Side in New Brunswick

The New Brunswick Government through the Department of Agriculture has arranged with the Chartered Banks to help the Farmers—where assistance is needed—to buy Sheep.

The Department will not only arrange to buy sheep **FOR** the Farmers, but will also buy good breeders **FROM** the Farmers—in other words, this branch of the Agricultural Department **WILL SUPERVISE ALL PURCHASES AND SALES OF SHEEP.**

CREDIT FOR THE PURCHASE OF SHEEP

Every bona fide farmer who wishes to purchase sheep for breeding purposes and cannot pay cash may secure twelve months' credit for two-thirds of the purchase price. GO TO THE MANAGER OF THE CHARTERED BANK IN YOUR COMMUNITY AND PLACE YOUR ORDER FOR THE NUMBER OF SHEEP REQUIRED, ACCOMPANIED WITH A CASH PAYMENT OF $3.00 PER HEAD ON GRADES AND $10.00 PER HEAD ON PURE-BREDS. The Manager will forward the order to the Department of Agriculture; the Department will purchase the sheep and deliver them to your nearest railway station. The balance of the purchase price can be paid as follows: Two-thirds, or about $10.00 per head, by a twelve months' note, and a cash payment of about $2.00 per head on grade sheep.

Under the credit system not more than 21 sheep can be secured by any one farmer.

Any farmer who wishes to secure a greater number and cannot purchase locally can be supplied by the Department of Agriculture for cash.

PRICES

FIRST QUALITY stock only will be secured.

All sheep will be carefully inspected before purchasing.

Mature sheep are hard to obtain, therefore ewe lambs will form the major portion of the stock distributed.

Prices will range from $13.00 to $15.00, according to size and quality, delivered at the nearest railway station.

The Department has not entered upon this as a commercial transaction—THE SHEEP WILL BE PURCHASED AS CHEAPLY AS POSSIBLE AND RE-SOLD FOR COST PRICE PLUS TRANSPORTATION AND HANDLING CHARGES.

PURE BRED RAMS

The Department is now purchasing pure bred lamb and shearing rams.

The lamb rams will cost from $30.00 to $40.00 and the shearlings $35.00 to $50.00 each.

Exceptional individuals will cost from $50.00 to $60.00 each.

THE RAMS HAVE BEEN SELECTED FROM RELIABLE BREEDERS IN THE MARITIME PROVINCES, QUEBEC AND ONTARIO.

SUITABILITY OF NEW BRUNSWICK FARMS FOR SHEEP PRODUCTION

The hilly country makes ideal conditions for sheep pasturage. Hay, roots and oats are the staple crops—they are likewise the staple sheep foods also.

THE WOOL PRODUCED IN THE MARITIME PROVINCES IS THE FINEST QUALITY IN CANADA AND BRINGS THE HIGHEST PRICES. MARITIME LAMB AND MUTTON CANNOT BE SURPASSED.

The system of farming followed in New Brunswick makes the keeping of a flock of sheep easy and very profitable.

THE FUTURE

H. S. Arkell, Dominion Live Stock Commissioner, states: "That sheep products have no doubt reached their maximum price, but that he cannot see any reason for a material decline in the price for at least ten years."

Unwashed wool is worth from 70c. to 80c. per pound, according to grade. Good lambs from $10.00 to $13.00 each. Under careful management the first clip of wool and the first crop of lambs will pay for the foundation stock.

If possible, purchase locally.

Secure foundation stock from your neighbors immediately if available—NOT ONE EWE LAMB SUITABLE FOR BREEDING SHOULD BE SLAUGHTERED THIS YEAR.

PROCEDURE TO PROCURE SHEEP

IF YOU CANNOT PURCHASE LOCALLY, PLACE YOUR ORDER IMMEDIATELY WITH YOUR LOCAL BANK MANAGER; HE WILL FORWARD IT TO THE DEPARTMENT OF AGRICULTURE, FREDERICTON. Unless orders are given it will be impossible to secure in time to make delivery before winter sets in.

This is a business proposition—think it over—decide and see your Banker.

For further information apply to THOS. HETHERINGTON, Livestock Superintendent, Department of Agriculture, Fredericton.

J. F. TWEEDDALE,
Minister of Agriculture.

A MESSAGE

FROM

THE AGRICULTURAL COLLEGE, TRURO, N. S.

TO

YOUNG FARMERS WHO CANNOT GO TO WAR

The war has established the value of Scientific Training in every pursuit of life. More than that it has made the nations realize the Fundamental value of Agriculture. At its close, there will be a demand for trained farmers on the farm and in professional life exceeding all previous demands.

Get ready to render your best service to your country by taking a course at the College of Agriculture during the fall and winter months. To meet labor conditions, the college will not open until November 5th and will close April 10th.

The course lasts two years at the conclusion of which students are awarded the Associate Diploma of the College. Graduates may enter, without examination, the third year at any Canadian Agricultural College and obtain the B. S. A. degree in two years. Previous gradutaes have from year to year stood at the head of their classes at Guelph and McDonald.

Instruction is given in Agriculture, Horticulture, Dairying, Veterinary Science, Chemistry, Botany, etc., as well as in English, Mathamatics, Bookkeeping, etc. Write about special practical course this fall in Farm Tractors. You can come to Truro and learn tractor operation under practical farm conditions.

FOR CALENDAR GIVING FULL INFORMATION WRITE

M. CUMMING, Principal, Truro, N. S.

The Prince Edward Island Exhibition and Horse Races

—AT—

Charlottetown, Sept. 24 to 28, 1918

OPEN TO ALL CANADA. OVER $10,000 IN EXHIBITION PRIZES

Live Stock entries, except Poultry, close 13th September. All other entries close 17th September.

Five days Horse Racing, Ten Classes, $4,100.00 in Purses.

Special Attractions in front of the Grand Stand.

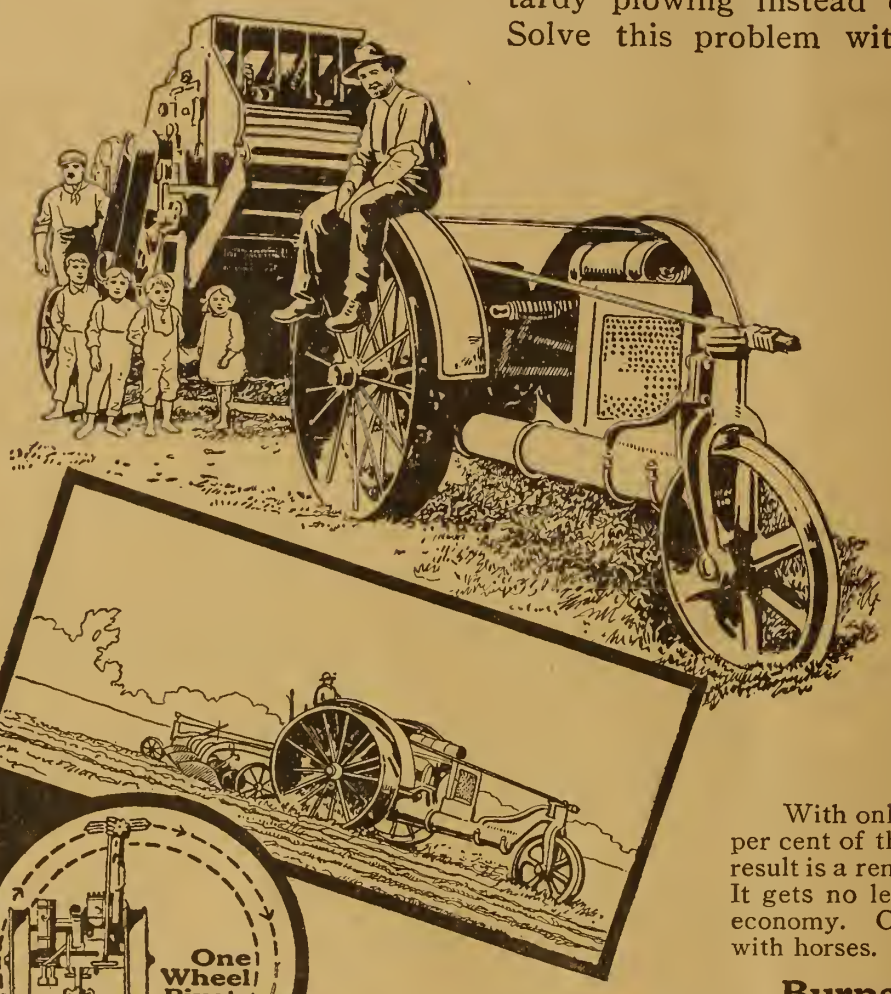
Nearest Station Agents will give particulars of rates.

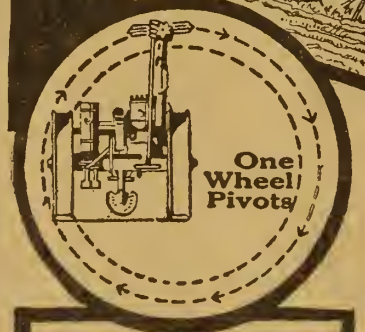
For Prize List and all information write the Secretary.

FRANK R. HEARTZ, President. *C. R. SMALLWOOD, Sec'y-Treas.*

Taking the Risks Out of Farming

LOOK back on the opportunities lost through late plowing, seeding or harvesting. Does it pay? Many a season you may have had to do this work before ground or crop was ready. The last part of this at best was delayed until late. With, say a 25 acre tract to plow, twenty days was required—of which ten were devoted to tardy plowing instead of sowing. Of course it doesn't pay: Solve this problem with the





TURNS IN ITS TRACKS
Means running furrows up to the fences, short turning with the binder, or hauling around the yard. Self guiding in the furrow.

Happy Farmer

12 h.p. at Draw Bar **Tractor** Model F 24 h. p. on Belt Work

Plowing is the big test. Happy Farmer with one man actually does the work that would need three men with three teams of three or four horses each to do. It speeds up plowing and every other kind of work—it pays.

Happy Farmer is so light—only 3700 lbs—that it makes no more impression per square inch on soft ground than horses hoofs, yet it will pull three 14-inch bottoms at an average depth of eight inches.

With only 3700 pounds of weight to propel along and 88 per cent of the weight carried by the big tractor wheels, the result is a remarkable combination of power with light weight. It gets no less than 2000 lbs. draw bar pull. That means economy. Compare it with the four wheel heavy type or with horses.

Burns Kerosene

Happy Farmer Engine burns cheap coal oil, available everywhere. Kerosene means more power at lower cost, providing the engine is a *real* kerosene engine. Happy Farmer *is not adapted* but designed expressly for kerosene. This fuel must reach the combustion chamber hot; our special Carburetor is placed right on the end of the cylinders; the long intake manifold is eliminated, condensation cannot occur, this means the most perfect kerosene burning motor ever invented.

Happy Farmer turns in its tracks, plows up the fences, no unplowed corners to finish with the team, turns sharp corners, with mower or binder, gets in and out tight corners with manure spreader etc. It turns either to right or to left—goes anywhere a horse-team can go. What could be handier?

Happy Farmer just bristles with interesting points of efficiency and economy of service year after year. You should know them. Write for illustrated literature today.

The Renfrew Machinery Co., Limited

Head Office and Works—RENFREW, Ont. Eastern Branch—Sussex, N.B.

Other lines: Renfrew Cream Separators, Renfrew Kerosene Engines, Renfrew Truck Scales

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MY LADY'S PERSIAN LAMB

There are probably few people in Canada who have ever given a thought as to whence the beautiful Persian Lamb fur, that ladies so much affect for their outdoor garments, is derived. In 1909, according to a pamphlet issued by the Live Stock Branch of the Department of Agriculture, at Ottawa, the first importation of Karakule sheep was brought into America, with the object of producing on this side of the water what is known to the trade as Persian lamb, Broadtail, and Astrakhan furs. This first importation consisted of fifteen head, ten ewes and five rams. Other importations to the United States followed in 1913 and 1914, with the result that during this time some fifty-four Karakules were imported, the majority of which were rams, the purpose being to mate these rams with the domestic sheep. It was from these importations to the United States that the first Karakule sheep to arrive in Canada were obtained, when in the latter part of 1913 flocks were established in Nova Scotia and Prince Edward Island. The following year other importations were made and several flocks were established in Nova Scotia, New Brunswick, and Alberta. At the present time there are between five and six hundred grade Karakules in Canada produced by crossing Karakule rams with long-wool breeds of sheep and approximately one hundred rams and ewes, either imported or descended from imported stock.

THE MARITIME FARMER

AND

CO-OPERATIVE DAIRYMAN

REGISTESEDTRADE MARK

Official Organ of The Farmers' and Dairymen's Association of New Brunswick, The Nova Scotia Farmers' Association, The Nova Scotia, New Brunswick and P. E. Island Fruit Growers' Associations, The Maritime Stock Breeders' Association, The Maritime Bee-Keepers' Association and The Newfoundland Agricultural Board.

Volume 23. SUSSEX, NEW BRUNSWICK, SEPTEMBER 10, 1918. Number 23.

How to Care for Wheat Crops

Timely Suggestions for Handling of New Brunswick's Wheat---With Timely Pointers for Millers and Other Information

By H. Trickey

At this time it would appear that any information with regard to the gristing of wheat would be of great value to those who are personally interested in raising this grain. The idea of the following is therefore to give a few instructive ideas which can be personally applied by the individual. Should any question arise it will be a pleasure to supply information which will lead to the proper solution in the best interests of the farmer.

The people throughout the Maritime Provinces have risen promptly to the occasion, and as a result the wheat crop should without doubt be the largest ever experienced. The need of wheat still remains imperative and without doubt increased production will continue from year to year. This being the cose it will not be amiss, at this time, to point out a number of details which should be universally understood and applied to the crop when same is harvested.

There is apparently no reason why the Maritime Provinces may not turn out as large and fat a berry of wheat as can be produced anywhere. The texture of the berry may be somewhat softer than that produced in Western Canada wheat and the tendency to moisture somewhat more pronounced. There however, can be no doubt that with ordinary care, a very fine quality of flour may be produced. Co-operation with the miller will certainly tend towards giving the greatest satisfaction to all.

In the first instance let us all remember that this country is at war. The fact has been given repitition until we may be inclined to accept it as an incident and overlook it as an essential. Our Allies require wheat and flour and we as a producing country must do our share to supply it. In order to supply more flour for Europe, we must accept a condition of using less ourselves.

Granted that in the past the wheat berry was separated into its three separate component parts—the outside skin, Bran; the inside skin, Middlings; the heart of the berry, Flour; each part consisting of itself carefully separated. To-day it becomes essentially necessary to increase the percentage of flour extraction and in order to do this it is obvious that a fraction of middlings be introduced into the flour. In other words the human being must be given more of the actual body of the wheat berry, the animal as a consequence will get a modicum less middlings.

One thing immediately must become apparent. The flour will darken perceptibly in color, in-as-much as the new element introduced is not so white. Authorities are divided about evenly as to whether this process increases or decreases the food value to the consumer. This question 'pro' and 'con' leaves a situation from which it is emminently fair to assume the actual food value is equal. This being the case we actually benefit others without affecting ourselves; this notwithstanding we should be willing to sacrifice much if necessary. The question of color might therefore well be eliminated and we should accustom ourselves to a condition which will affect the appearance of our neighbor's loaf equally with our own.

Having established a flour basis let us now look at the several ways the farmer may effect the quality of his own flour; always remembering that the miller makes flour according to certain rigid laws laid down by the Canada Food Board. Your miller is positively required to give a definite extraction of flour from a given quantity of wheat. This is not a case of what he can do, nor what the owner of grain would like him to do. Either he lives up to the law or he cannot grist the grain. Nor can any other miller do otherwise.

It would seem desirable that the texture of the flour be kept as fine as possible, that the proper amount of flour be extracted from the berry and that the color be as reasonably white a spossible. In order to secure this result the wheat must be in reasonable condition. It must be reasonably free from foreign matter. It must be of a fine average quality and last but not least, it must be dry. By this it is not implied that it be bone dry, but rather that it be fairly tempered—always remembering that it is better to be slightly over than under dry. Much wheat has appeared at the mill too wet to be floure dat all, not to mention being properly floured.

Several ways of drying wheat are practiced throughout the country. These vary according to climatic conditions in individual sections. Where little rain is experienced, a very fine practice is to allow the grain to remain out in the field a reasonable time. Pile the sheaves in stooks of about six with two extra ones on top to shed any rain which may fall, and in case of a rain do not rush the damp grain into the barn, but see that it has a chance to dry out thoroughly in the air. Nature practices a tempering process that is admirable. However, this is largely impossible to the proper extent and it is therefore only advised where weather precedent would warrant it.

Air is the one best dryer and often by adequate bin construction and placing, the proper temper is secured. In this connection it may be pointed out that a certain amount of moving would not be amiss. Be sure the bin is in a dry place and that a little circulation of dry air is desirable. Certainly be positive that wheat is not exposed to dampness or wet currents of air. The place of storage must be clean and free from exposuie to mustiness or foreign influence of detrimental nature.

When all efforts as above have been insufficient to secure a good drg grain, it is always possible to place a number of filled bags with in the warm air influence of a stove. The trip to the mill may be anticipated a sufficient length of time to secure adequate treatment. The fire probably would be there anyway and the little exertion necessary will be amply repaid in your flouring results. Several cases are known where the grain is stored loosely in the garret of the house and this is a satisfactory arrangement, where the quantity is not too great.

The miller can install machinery to dry your grain, but it is reasonably certain to expect he does not possess it now. It costs money to buy and operate this machinery and of course he would have to make a charge to cover himself. Also the drying takes time and it is desirable that you secure the return of your product as promptly as possible. All things considered, the simple application of common sense to your individual problem will secure the proper results to please both yourself and the miller, who really has just as many problems of his own to work out as you have.

The dryness of the grain materially will affect the texture of the flour. When wet the gluton in the grain is more or less pasty. It sticks to the bran and shorts, it adheres to the machinery and helps clog the elevators; you loose weight and the miller looses his temper. The two skins themselves are exceedingly tough and fibrous, and that part of the shorts which enters into the flour is coarser and tougher, also darker. The flour itself passes through the silks more slowly and tends to clog up. Where the grain is damp when milled, the resultant flour is also damp and when stored in barrels it is always much more likely to get musty. If you want good flour and more flour it would therefore appear that it is absolutely necessary that you treat your wheat properly.

It stands to reason that if foreign grain or matter is allowed to remain when gristing, that this will materially affect the flour. It is therefore desirable that the wheat be cleaned as much as possible, and kept clean and free from foreign matter. One may be surprised to know that such little things as hammers, screw-drivers, pieces of iron, stones and even ten dollar gold pieces are not strangers to the miller. Needless to say some of the above would be of more value elsewhere than in the wheat sack, and one would expect the owner of the gold to be rather careless with such incidentals as other kinds of grain, kept reasonably close to the wheat bin.

Just a little Buckwheat mixture will secure for the farmer a flour which resembles a buckwheat flour more closely than a wheat flour. Just a little Oats will secure for the miller a nice crop of oat hulls in his silks, which will materially affect the flour you get in return. Just a few lumps of earth in the grain will help to darken the flour, and earth is certainly of more value in raising grain than in nourishing the human body.

The cleaning of grain is a matter that has been perfectly solved long since and it would hardly seem worth while going into details at this time. One point might be worth while mentioning which touches the subject in a general way—where individually the problem is too small to work out economically, there is always the recourse to COMMUNITY CLEANING. It pays to have standardized clean wheat for one great reason, profitable returns. Example, with ten bushels of low grade wheat mixed in with twenty bushels high grade you would receive the low grade price on the full thirty bushels unless cleaned and graded. The difference in the price paid for the two qualities when properly separated and excess received on the twenty bushels high standard, will much more than pay for the cost of this cleaning. This is very important in selling grain, but it is of paramount importance in carrying forward seed heat. We know of no place where the farmer can gain as big a reward from as small an exertion as in eliminating the weeds from his seed grain. Let the grain be clean and of high standard quality and the resultant crop or grist will show class as surely as the blooded beast will develop quality in offspring.

Picture for the negligent farmer the hurt feeling and cheated expression, when he hears that his more careful neighbor has received more money for his wheat. Each one brought the condition on themselves. It is probable that wheat will appear for gristing which should really be ground on the chopper for pig feed, rather than the endeavor made to have the miller make flour for the family table, the successful man will therefore control his crop and not let his crop control him; this may sound big but it is really nothing but the application of a little common sense with a very little extra energy. You can control the contents of the package the merchant gives you for your money and just as surely you can control the return the

(Continued on page 768)

Feed Situation in Maritime Provinces

As in Other Parts of Canada it is Acute--Maritime Farmer has Already Distributed Hundreds of Tons of Feed at Cost

In discussing the feed situation, the Maritime Farmer does not profess to be omnipotent. It is simply recording information, gathered on the ground floor by its representative, who has toured the milling districts and from information furnished from official sources. So, if these present indications are not all verified, and feed is more plentiful than the present outlook would indicate, the only thing established will be that officials are only human and that we will have reason to return thanks for conditions which, just now, are far from promising.

Since our last issue we have had a lot of information on the feed outlook, which demonstrates beyond question that the wise buyer will not pin his faith on an abundant supply of bran and shorts. Sir George E. Foster, Mr. H. B. Thompson, Food Controller for Canada, (whose letter is published elsewhere in this issue) and the live stock branch of the department of agriculture, Ottawa, all agree that mill feeds will be far more scarce this season than last. The first call for wheat will be from the men who are fighting in the trenches. Those of us at home will have to guarantee that supply. In order to get the wheat to the fighting front, it is necessary to ship it in the manner which will call for the use of the smallest possible tonnage of sea-going shipping. The method which insures this economy is shipment of wheat in the berry. Grain can be handled through elevators much more cheaply and more rapidly than flour. Therefore there will be less flour ground in Canada this year and consequently there will be less feed. So a substitute will be necessary.

No Cotton Seed Meal

Then the present indications are there will be no COTTON SEED MEAL. The United States government has not consented to the export of any of that comodity to Canada and the outlook is that licenses for export will not be issued. This leaves oil cake as the only available substitute. This supply is also very limited. The Dominion government has been shipping a quantity at $59.00 per ton f.o.b. New York. Less than three hundred tons of this remains. If you want some, wire the Maritime Farmer, and while it lasts, your Society can have it. Supplies in Canada of oil cake are limited too. However, the Maritime Farmer will endeavor to handle your order if you will send it along.

COMPARATIVE ANALYSES

	Ground Special	Ground Standard	Molasses Hog Feed	Molasses Dairy (about)
Moisture	12.80	13.13	10.78	11.00
Crude Protein	13.31	14.38	18.42	17.00
Ether Extract (fat)	4.00	4.92	6.49	4.5
Crude Fibre	18.81	10.32	14.00	15.00
Nitrogen-Free Extract	45.30	57.64		
Carbohydrates	64.11	67.96	55.58	62.00

	1918 Bran Average	1918 Midds. Average
Moisture	11.35	11.03
Crude Protein	14.91	17.09
Ether Extract (fat)	3.99	5.33
Crude Fibre	12.43	10.89
Nitrogen-Free Extract	51.07	51.34
Carbohydrates	63.50	62.23

PRICES

Ground Special	$28.00 per ton
Ground Standard	$45.00 " "
Molasses Dairy	$40.00 " "
Molasses Hog Feed	$50.00 " "

What Can Be Substituted

However, there is no reason why anybody should sit down and wring his hands. There are feeds to be procured and good feeds too. Months ago the Maritime Farmer, impressed with the fact that the province of Ontario considered it wise to buy 1,500 cars of feed, looked about for a supply and secured it. The feeds which we are able to offer are made from elevator screenings. For years Canadian screenings sold in the United States and there made into feeds of various kinds and sold without trouble. When the feed situation became so acute, the food controller decided that Canada needed the supply and the export of screenings was prohibited, except under special conditions. This feed is now available. Already the Maritime Farmer has distributed some hundreds of tons through various agricultural societies.

Reports are Favorable

The reports received in regard to the feed are favorable. So far we have only sold Ground Special. This feed has been tested by some of the best feeders in New Brunswick, and they are ordering more of it. The feed was something new on the market and the Maritime Farmer decided to test it thoroughly. Shipments were therefore were made to widely scattered centres and the reports received are encouraging. However, it is not as good a feed as the molasses dairy, which with a protein test of 17 per cent, and 4.5 fat, is a good buy at forty dollars per ton f. o. b. Fort William. The freight rate to the Maritime province points will average under ten dollars per ton. Your nearest station agent will give you the freight rate definitely.

Get Your Orders In

If feeds are desired this year, it is well for you to get your orders placed. Transportation difficulties will not be lessened this winter. The outlook is for even greater inconveniences than prevailed last year. Fuel will be a great problem, particularly if we have another hard winter. Then there have been thousands of skilled railway hands taken for the army. In addition to this there are overseas from Canada and the United States about two million men and their wants must be provided for. By winter another million men will be in France and the strain on the railways of the continent particularly under winter conditions, will be severe. Every railroad to the Maritime Provinces will be congested. Therefore it is wise to get feed and get it now.

Analyses of Feeds

The Maritime Farmer has secured twenty-five mixed cars of feeds at the prices given below. The analysis of the various feeds are given. You know what you want and can make your selection. It may be remarked that probably before you get your order in these twenty-five cars will be disposed of, but we will have others to replace them. These feeds are shipped to you at the manufacturer's prices. He will make the draft on you for the bill. You pay him, not us. The prices are all f.o.b. Fort William. That is to say, you pay the freight and all bank charges, exchange etc. The latter item is not a large one but it is important to remember that you are responsible. You must have your local bank notify us that the draft for the feed will be paid on presentation. We only sell through agricultural organizations and expect all persons receiving feeds to be bona-fide members of the organization handling feeds. Then the buyer must be at the time of buying or become a subscriber to the Maritime Farmer at one dollar per year, payable in advance. This is asking very little for the service we are giving. We think it is the biggest service ever given by a farm paper in Canada.

DON'T YOU THINK, MR. FARMER, IT IS YOUR DUTY TO SUBSCRIBE FOR A PAPER THAT IS DOING FOR THE FARMERS A SERVICE WHICH LAST YEAR SAVED THEM THOUSANDS OF DOLLARS AND WHICH THIS YEAR WILL SAVE THEM TENS OF THOUSANDS OF DOLLARS?

JUST AN EXAMPLE. OIL CAKE IS BEING LANDED BY US AT ABOUT $66 OR $67 PER TON. DEALERS ARE ALREADY ASKING $80 PER TON. DO YOU SEE THE 'OINT?

Factors Which Influence Growth and Development of Dairy Cattle

With the high price for feed in recent years the producer of dairy products has to consider more carefully than ever before how to obtain the largest amount of product at the least cost. The cost of production includes a variety of items, the most important of which are labor, capital investment and feed. The cost of a hundred pounds of milk or a pound of butterfat depends upon (1) the total amount expended to maintain the herd and (2) the amount of product secured.

To a large extent the expenses of maintaining a herd are in the nature of fixed charges that must be met and which are not subject to much reduction by skill in management. The results of skillful management are to be expected mostly in a large production per cow rather than in a decrease in the overhead charges necessary to maintain a herd. There are two factors which largely determine the production per cow in any dairy herd. The first is the adaptation of the cow to the purpose for which she is used, the second is the skill with which she is fed and managed. The question which we have to discuss at this time concerns the first mentioned.

It is not necessary at this time to emphasize the enormous importance of the proper selection of the individual cow, as a factor in economical production. Every agricultural paper, every speaker on dairy subjects, calls it to your attention. Your cow test associations are based upon this same important principle and undertake to assist the members in this effort to eliminate the unprofitable cow. My object at this time is to discuss some questions concerning the raising of dairy heifers with a view of answering the question of better dairy cows.

The problem of raising dairy heifers, involves not only the question of economic feeding but also the equally important question as to the influence of the methods of feeding and raising upon the later value of the animal.

Many of the most thoughtful breeders are raising the question in their own minds and asking if it is possible to follow any method of feeding and management of dairy heifers that will make it more certain that the heifers will be good producers. It is another application of the question as to the relative importance of heredity and environment. Does a good dairy cow or an inferior one derive her special dairy characteristics by inheritance, or is it a result of her treatment from birth to maturity? Is a good dairy cow born that way, or made what she is by her owner?

It is a well known fact that there is considerable difference in practice among cattlemen in regard to the feeding and handling of dairy heifers. We find radically different views on some points. Some hold that a cow should be fresh at a very early age to insure the best development of the milking functions. Others take a directly opposite view and prefer a cow to be quite well matured and state that only in such animals are the milk-producing functions the most highly developed. Some who raise dairy cattle feed their calves only bulky feed and in rather scanty quantities. Others feed largely with grain and grow them as rapidly as possible. Some hold that if a heifer of a dairy breed is allowed to get fat when young she develops a tendency to use her food for body fat all her life rather than to produce milk. Others hold that the dairy qualities of a cow are not influenced in any way by the method of feeding when young and that no harm comes from a heifer being fat. Some desire to develop the largest animals possible for the breed. Others prefer cows medium sized or small for the breed.

Noting the absence of any definite information along these lines the writer several years ago started an extensive experiment for the purpose of obtaining some data that would make it possible to decide to some extent at least whether a good dairy cow is the product of heredity or the result of the method of raising.

Before starting the investigation, questions were sent to a list of 1,000 selected breeders of dairy cattle to obtain their ideas on the subject. The

nature of these questions may be seen from the following examples:

1. How long have you been breeding dairy cattle and how many animals are included in your experience?
2. Do you believe from your experience that a dairy cow may be injured by being allowed to become overfat when young?
3. Are there any feeds that should especially be avoided in this connection?
3. Are there any feeds that should especially be avoided in this connection?
4. How would you proceed if you wished to develop especially large animals?
5. Does heavy feeding when young result in a larger cow or earlier maturity than light feeding?
6. Does your observation indicate that the iberal feeding of roughage while young help to develop a strong digestion.
7. What effect has age at first calving on dairy qualities of the cow when mature?
8. What effect has age at first calving on the dairy form or dairy type of the cow when mature?
9. At what age, on the average, do cows of your herd reach their full size?

Replies were obtained from 301 breeders representing the four leading dairy breeds. Experiments were then started to test some of the most important points, especially the influence of a light as compared with a heavy ration during the growing period and the influence of the age at first calving upon the milking qualities of the cow when mature. In discussing the subject the opinions of the breeders and the results of our investigations covering eight years will be mentioned.

In our experiments we used 42 heifers, all registered. and representing the Holstein, Jersey and Ayrshire breeds. Complete records of feed, weights, measurements of growth and records of milk production were kept for each animal until at least two milking periods were complete. One-half of these animals were raised on wholemilk and givn in addition as heavy a grain ration as they would consume from birth to coming into milk. The other group of 21 were fed skim-milk and hay but no grain at all until after they calved. By this means the one group was grown at the fastest possible rate and made as fat as an abundance of grain would make them, while the other group was never in more than moderate condition and growth was slow.

The results of our experiments showed the most marked effect of the heavy ration was a much more rapid growth. The following shows the comparative size of Holsteins at intervals:

Holsteins

Age	Height	Weight	Height	Weight
6 mo.	41.1	422	38.6	317
12 mo.	46.3	654	42.2	432
18 mo.	49.6	912	45.7	598
24 mo.	51.2	1,110	48.4	731
36 mo.	52.6		50.4	
Mature	53.4	1,260	52.1	1,150

A liberal grain ration not only caused a much more rapid growth during the first two years especially, but this liberal ration resulted in developing animals somewhat larger when mature. The light fed animals grew slower but continued growing longer, so the difference between the groups was partially but never entirely made up. The liberality of the ration when young is then clearly a factor having some influence upon the size of the animal when mature, especially if combined, as will be mentioned later with early calving. The same results were obtained with the other breeds. If you want to make a good advanced registry record with a two-year-old heifer, of course, you must feed her very liberally up to that time, and she is then really as old in development and will give about as much milk as a heifer raised on a ration of roughage when three years old. In other words, the more liberal the ration during the growing period, the earlier the animal reaches maturity.

An interesting fact noted in our work is that cows reach their full height and skeleton growth from two to three years before they are mature in weight. A Holstein cow grows but little in skeleton after four years and none after five years. She gains in weight up to about seven years and at times even longer. A Jersey has nearly her full skeleton growth at 36 months, but may grow a little up to four years, while she increases in weight up to six years and possibly longer.

Our results confirmed the opinion expressed by the breeders consulted regarding th influence of the liberality of th ration upon the rate of growth and the final size reached.

Age of Calving

One-half of our 42 animals calved at an age which would be called early for the breed, about 24 months for Holsteins, 22 months for Jerseys. The other group calved at an average age of three years.

The age at first calving is a factor influencing the size of dairy cows. Contrary to common opinion, pregnancy does not retard the growth of the animal either in weight or skeleton, but producing milk exerts a strong influence in checking growth both in skeleton and weight. Light fed Jerseys calving at an early age showed an average height of 48.5 inches at 30 months, and others on the same ration but calving at 36 months, were at the same age 49.1 inches in height. The difference in weight was even more pronounced. Animals calving at an early age never reach the size they would if calving a year later. The most pronounced results with reference to size may be brought about by a combination of a light ration during the growing period and early calving. A heifer undersized from a poor ration, and calving at a very early age, is almost certain to remain undersized. The combination most favorable for developing the largest animal is a heavy ration when young and late calving. The better her milking ability the more pronounced the effect. As a result of these combinations we were able to develop one Jersey that was 53.4 inches in height and weighed 1,122 pounds when mature, while another was only 47.3 inches in height and weighed 720 pounds at maturity.

Another experiment taught us that a ration extremely low in protein may retard the growth in a heifer in the same manner. That is to say if the growing animal is given a very low protein ration for a long time an undersized animal is to be expected. There is little danger of a heifer suffering from a low mineral matter in the ration and none if a legume hay is fed. Having discussed some of the factors influencing the size of animals it may be well next to raise the question as to the importance of the size of the cow to economical milk production and whether w ewant a large cow or a small one. Is a large animal desirable? In general, those keeping cows to produce dairy products for sale prefer a cow medium to large for the breed. Most breeders have the same preference but some, especially those breeding the smaller breeds, do not favor an animal large for the breed and often look with more favor upon the smaller types. The cows that have made the largest milk and fat records have without exception been large animals for their breed. Prof. Woll has also shown that the highest production is found with cows that are large for the breed to which they belong. The indications are that the stimulation to give large quantities of milk may be inherited entirely independent of size. An undersized cow with a great stimulation to give milk is limited by her capacity to digest feed and cannot compete with a larger cow that has inherited the stimulation to give milk to a high degree and has capacity to handle the feed necessary for high production. From an address by Prof. C. H. Eckles of the Missouri Experiment Station.

Good News for Fertilizer Users!

Agricultural Societies United will Have Acid Phosphate and Nitrate Supply for Next Year---Prices Higher Than in 1917

The directors of the New Brunswick Agricultural Societies United are in the pleasant position that they can announce definitely that a supply of unmixed fertilizer will be available for the year 1919. The orders have been placed for acid phosphate and for nitrates and full particulars, with prices will be mailed to the agricultural societies of the province in the near future.

While the fertilizer situation is acute and caused the directors no small concern for a time, things have been shaping better and there will be nitrates available, in as large quantities as last season, if not an even better supply. The prices are up a little but the advance will not be a serious one. tl may be stated that a few weeks ago the United States government prohibited the use of nitrates for any purpose, other than the manufacture of explosives. This came as a severe blow to the fertilizer dealers, but the N. B. Agricultural Societies United did not sit down and cry about it, but got busy and located nitrates. The other was easy and several thousand tons will be at the disposal of agricultural organizations at cost.

There will also be available in this province at cost, mixed fertilizers 3-6-5. These goods have alerady been tried out in large quantities and are found to be superior. Farmers in Carleton county, who have used them this season, are satisfied that the goods are all right and there will be a good supply at very reasonable prices this year. These goods will be available at cost to agricultural societies and something more definite will be announced a little later.

The directors of the Agricultural Societies United have decided to supply branches of the United Farmers upon the same terms as agricultural societies. The object of the movement is to give service to farmers who will organize. The work is growing and promises to bear greater fruit in the future. Get organized. Await the prices of the N. B. Agricultural Societies United before placing your order.

CARE OF EVERBEARING STRAWBERRIES

The most important treatment for ever-bearing strawberries is thorough cultivation throughout the summer to retain soil moisture. The plants should be given clean cultivation and should be hoed in the rows to keep down all weeds and to maintain a fine dust mulch throughout the growing season. After every rain the ground should be cultivated and hoed to break the soil crust around the plants and to re-establish thoroughly the dust mulch on top.

If the summer is hot and dry, it is advisable to apply between the plants in the row a mulch of old, finely-rotten straw, decomposing leaves or other available material which does not contain weed seeds. This mulch keeps the ground cooler, helps to retain moisture, induces fruitfulness, and keeps the berries free from soil particles. It is not wise to apply this mulch until the weeds in the row have been killed, as it interferes with cultivation. If thorough clean cultivation in a row has been kept up during the spring and early summer, most of the weed seeds will have sprouted and the weeds will have been killed before the mulch is applied upon approach of summer drouth.

Just before cold weather in autumn the entire patch should be mulched with straw, prairie hay or other loose material. Care should be taken to select a mulch which does not contain noxious weed seeds. This mulch should be left on the row until after the main fruiting season the following spring, according to J. C. Whitten, of the University of Missouri College of Agriculture.

SURVEYING NEW BRUNSWICK SOILS

Mr. E. F. Taylor, of the provincial department of agriculture, is engaged in an extensive survey of the soils of New Brunswick. Mr. Taylor is a graduate of Macdonald, and took high honors in soil analysis. His work is something in which this province stood in great need. The task before him is a big one, but it is in competent hands. Mr. Taylor has already covered a lot of ground and his findings should be worth a lot of cold cash to the province. It is worthy of note that Mr. Taylor will be associated with the N. B. Agricultural Societies United and that his services will be available in giving advise as to the fertilization of soils.

MAKE FARM POWER MORE EFFICIENT

Efficient motive power is a most essential factor in increasing agricultural production.

"Since the horse is our main dependent in performing farm work, he is given first consideration. To increase the efficiency of our horse power:

1. Treat the horse kindly and give him the best of care.
2. Water him frequently. It increases his endurance and power.
3. Feed regularly a uniform ration.
4. Feed about one and one-third pounds of grain and one pound of hay for each hundred pounds live weight.
5. Feed heavier for severe work conditions.
6. Allow rest periods occasionally.
7. Watch the horse carefully. Drooping ears, unsteadiness of gait, short and quick breathing, and a sudden ceasing to sweat are danger signals demanding prompt attention.
8. If the horse suffers a heat stroke, remove the harness, protect him from the sun, apply cold to the head—either water or ice—wash out his mouth and nostrils, and sponge his entire body with cold water.
9. Provide as cool a place as possible for the work horse at night.
10. Avoid overspeeding and fretting.
11. Eliminate lice, worms and flies.
12. Groom the work-horse thoroughly.
13. Clean the collar every time it is put on the horse, and keep its bearing surface hard and smooth.
14. If possible, sponge off the work horse, especially where the collar and other parts of the harness have left their marks when he comes in from work. Sponge out his mouth, nose and eyes. Wash his shoulders every night for a few weeks with cold salt water.

Some folks have toughened themselves by being out-of-doors in all sorts of weather; but nobody ever saw a plough, mowing-machine or other farm tool that was made any better by that kind of treatment. It can't be done!

THE MARITIME FARMER.

And Co-operative Dairyman
Registered Trade Mark

Semi-Monthly Journal devoted to the interests of the farmers of the Maritime Provinces.

Official Organ of The Farmers and Dairymen's Association of New Brunswick; The Nova Scotia Farmer's Association; The Nova Scotia and P. E. I Fruit Growers' Associations; The New Brunswick Fruit Growers' Association; The Maritime Stock Breeders' Association; The Maritime Bee-Keepers' Association; The New Brunswick Poultry Association, and the Newfoundland Agricultural Board.

Subscription price $1.00 per year. This paper is sent to subscribers unless a definate order for discontinuance is given.

The date after your name on the little green label on front page, is in every case the time to which your subscription is paid.

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NOTICE TO ADVERTISERS.—Changes of ads. should reach this office one week before date of issue, in order to insure insertion.

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The Maritime Farmer, instead of giving you one receipt in the year for a paid subscription, sends you 24, or one every two weeks. You will find it on the GREEN COLORED LABEL on which your address appears. The date printed thereon is that on which your subscription terminates. If on payment of your subscription the date is not changed within two weeks, please notify us. No other receipt will be sent.

SEPTEMBER, 10, 1918

DATES OF ISSUE.

September	10-24
Octoebr	8-22
November	5-19
December	3-17

USING PICTURES IN SELLING STOCK

The breeder of the animals that are masterpieces in the livestock world of today is just as much a genius by having produced such splendid animals from the raw material of the scrubs of former years, as the man who carves exquisite works of statuary out of the solid marble blocks. He has even more use for art in his business, for after producing these animals, he must sell them at good prices or his operations will cease. Art is used in more ways than one in showing the prospective buyer the excellence of the animals for sale. The best specimens are fitted and shown at the county and provincial shows. After having bred the very best of animals, it takes unusual ability to be able to pick the best ones from the herd and prepare them so as to show them to the best advantage.

Public sales are made in which the ability of the auctioneer as an oratorical genius is the work of art upon which depends, to a great extent, the success of the sale and ultimate success of the breeder in the business. We sit in rapt attention while a Woods, a Repert, a Duncan, a Harriman or a Gross inspires us to pay unheard of prices for the animals offered. They may do it with inspiring oratory or by using the plain, blunt truth in a forceful way. In any case their ability to sell the animals is in keeping with the work the breeder has done in breeding them and getting them ready.

To get the buyers collected at the sales and to sell animals by mail without the purchaser seeing what is present, we advertise in the good papers that are in line with the business. The ability of a fieldman to describe the animals for sale, in an attractive and accurate way, has a great deal to do with their sale. It is here that art plays its silent work. The ability of the fieldman to draw word pictures that attract the buyer is assisted by the man who makes real pictures that show the animal as nearly as is possible in real life.

A real picture will show in a glance what it takes pages to try to tell in writing. At its best the description cannot show the delicately-proportioned animal as a live object as the picture can. Pictures are indispensable to the display advertisement. They are attractive, and, if properly arranged, they give every advertisement an individuality that is really artistic. And then the last great appeal is made in the catalogue. It owes its attractiveness and ability to command the attention and presence of men from hundreds of miles away to the sale at the appointed time, largely to the pictures used in making it up. It is here that art speaks louder than words of tongue or pen. A real life-like picture, by its silent expression of the animal it represents, wileds a mighty force over the man who looks at it. The appreciative breeder knows something of the real object and is stirred to the depths of his pocketbook.

Cattle papers are running over with pictures that are real works of art. And the cattle industry has gained a momentum in the last few years such as it has not known for 40 years. Art has been one of the most powerful stimulants to this onward rush. It has idealized the perfect animal to a certain extent by minimizing the defects and exaggerating the merits. With these ideal animals in mind and with an intelligent understanding of the laws of advertising, the breeder will be able to produce ideal living animals with as much certainty as the sculptor moulds the plastic clay or hews the solid granite.

The young breeder of today is the veteran breeder of tomorrow, just as the boys of the present will be the men of the future. Every breeder recognizes the value of the beginner and should help and encourage him in every way possible. The older breeders should try to get more young men interested. There is no force that has a stronger tendency to draw recruits to the ranks of the progressive breeders than that of the life-like pictures to be found in the breed papers. The young man or boy, who has been accustomed to seeing ordinary cattle or hogs, often receives an inspiration to breed better animals by looking at these pictures. The pictures build the ideals and ideals inspire one to perfection both in desire and attainment.

Breed papers must be, auctioneers are absolutely essential, and both are doing a great and wonderful work. Art should and will be a great factor in the work of breed promotion when we awake to its real worth and the valuable assistance it can render in this work of advancing the interests of fine stock breeding.

KEEPING STOCK HEALTHY

Better than medicine is the prevention of disease. A few year sago at a state vetreinary conventio na member of the profesion indulged in denunciation of county agricultural agents because the one in his county had instructed his clients how to feed horses, cattle and hogs so as to avoid some of their common digestive ailments. The veterinarian asserted that he could notice a decrease in the number of cases of that kind which he was called to treat. That member of the profession is the exception, however. Another veterinarian in the same county makes it a point to instruct his patrons as to suitable feeding and care. And significant of the success of right-doing the latter veterinarian has four times as large and profitable a practice as his narrow-minded contemporary.

It is every stockman's duty and privilege to keep his stock as healthy as possible. It tis profitable to do so, and at this particular time the national welfare requires the conservation of all farm animals. Everyone whose duty it is to care for cattle, horses, sheep, hogs, or poultry should realize that most of the ills of animals can be traced to improper feeding and careless indifference to their comfort. The skilful feeder seldom has sick or dead stock. It is natural for animals to be healthy and vigorous without drugs. They must have suitable amounts and variety of feel, and they require good water. Those are the prime essentials on which health and vigor depend. If these factors are skilfully handled the factor of sickness will seldom enter the equation.

THE SHEEP KILLING DOG

Old Collie around home seems a peaceful canine. He doesn't look or act like a sheep killer. But every night, over the country, a few hundred old Collies, Towsers, Sheps, and dogs of high esteem at home, useful enough and harmless so far as their owners know, set out on little rampages, and in the morning a sheep owner somewhere finds some of his stock dead or worried. We usually blame dogs kept in town for these depredations. Nearly every town has a dog fancier of some kind whose hobby usually runs to hounds, or if no fancier exists the barber, perhaps keeps a bird dog, or one or nondescript canines simply hang out around the village, miraculously escaping the usual annual clean-up of ownerless pups, and these are supposed to commit most of the ravages caried out against the sheep flocks of the community. They do their share, no doubt, but one of the peculiarities of the sheep-killing dog is that he is not any more apt to be the town hound than the respected and well regarded farm dog. One will develop the killing vice as readily as the other, and will carry on his work with a slyness that makes detection next to impossible. Old Collie, snoring under the kitchen table in the early part of the evening, may be anything but a peaceful and respected canine before dawn. But it would be pretty hard to prove it on him in the morning. Sheep killing is a vice that dogs readily acquire and, having once started, cannot be broken off. Sheep killers hunt usually in pairs or small groups and attack flocks anywhere in their immediate neighborhood or miles away, almost always at night, making it hard to determine just what dogs of the community are the guilty ones. After a dog has killed a few sheeep, the vice becomes a mania, and he not only kills sheep himself but leads other dogs to the work. Few would ever suspect their own dog of killing sheep, the sensible, useful farm dog least of all; but the fact remains that sheep are killed by dogs every day of the year, and so many experiences have been recorded of the dog most highly esteemed proving the worst sheep-killer in the community and the most cunning in obscuring the evidences of his clandestine prowlings, that practically any dog is open to suspicion. The best means of being sure that the innocent looking lod Shep, snoozing in the sun of a warm afternoon, may not be committing depredations on a neighbor's sheep flock in the early hours of the following morning, is to keep him fastened up at night.

* * *

Diversify your farm produce. Do not try to raise all one commodity no matter the price.. The best and most successful of farmers are those who keep something of everything.

* * *

The traction era is drawing. The romance of the automobile business bids fair to be duplicated.

Visit a demonstration at Florenceville, Fredericton or Baltimore in September, first and second Tuesdays and Fridays in consecutive order as above mentioned.

GETTING AFTER PROFITEERS

Food Board Records large number of Convictions. Price of Mill Feeds are fixed and userers are liable to Prosecution.

The Maritime Farmer has been receiving complaints from a number of points to the effect that mill feeds are being sold at prices which are in violation of the rules laid down by the Food Controller. All mill feeds are sold under license and the profits on bran and middlings are definitely fixed. Those who violate the law may be prosecuted. The Maritime Farmer is in receipt of a letter from the Food Controller, covering violations, which will be read with interest by buyers of feed.

The letter is as follows:

Ottawa, August 26th, 1918.

In answer to your letter of August 22nd, the Orders of the Canada Food Board have the full effect and force of regular statutes and, as you know, are enforcable in the regular way by the Provincial and Municipal Police. All over Canada this is being done.

Anyone who knows of an infraction of the regulations of the Food Board can inform the Police, and surely it is not asking too much of the farmers, in their own protection, to request that they do this and so help to have the food regulations carried out. If the matter is brought before the Police and is not adjusted by a Magistrate, if we can get specific information, we will at once investigate and take action. In the present edition of The Bulletin, which I enclose herewith, you will find over fifty cases where we have taken after them and fined or closed up.

Unquestionably bran and shorts will be scarcer this year than last as the quantity of milling wheat in Canada is going to be very small, and proportionately there will be a bigger demand for feedstuffs. We wrote fully to the Department of Agriculture for the Province of New Brunswick, on July 30th, dealing with the situation. Some of the provinces in Canada have already taken precautions to ensure a supply of feed for their farmers. I feel that I am right in advising you not to rely much on bran and shorts for the coming winter, but to see what can be done in the concentrated feed line, and it is none too soon to make these necessary arrangements.

I am glad to see that the crop conditions in New Brunswick are reported to be good, and I sinceerly hope that you will have success in harvesting every last pound.

Yours faithfully,
CANADA FOOD BOARD,
Harry W. Thomson,
Chairman.

J. D. McKenna, Esq.,
The Maritime Farmer.
Sussex, N. B.

SHEEP NOTES

Dr. L. H. Price of Moncton believes in the sheep business, also in co-operative marketing of wool. He has given tangible evidence of this by taking five shares in the Canadian Co-operative Wool Growers Limited.

E. W. Spinney of Hartland writes in, "Returns for wool to hand. Very much pleased with result of marketing co-operatively."

Agricultural Society No. 114 has been using pure bred rams of the Down breeds for years. This year twelve members of the Society marketed their wool at the Fredericton warehouse. One-half graded and sold at 81½ cents, one-sixth at 82¾ cents; one-third at 75½ cents.

Urban Haines of Burtt's Corner clipped 18 pounds of wool from a two shear Shrop ram. This is the high water mark for Shropshires.

H. S. Arkell, Dominion Livestock Commissioner says, "No doubt sheep prices have reached their maximum, but that he cannot see any reason for any material decline in the price of sheep products for at least ten years." He should know whereof he speaks.

J. H. King of Sussex is keeping all his Shropshire ewe lambs this year. Confidence in the future alright. Probably J. H. King had something to do with it.

Harding Brothers of Welsford are considering whether the Shrops will pay as well as the Holsteins. Wouldn't be surprised to see Tim bring home some "good un's" from up country.

Burder Goodwin of Baie Verte, N. B., will clean up in Oxfords at the Charlottetown fair. We like to see N. B. breeders bring home the shekels. Burder claims that a cow makes as good a mother as a ewe. One ewe died this year and the old family cow has been drafted. She certainly responded. Probably brought up his best lamb this year.

The Leilbac Sheep Products Company of St. John with a ranch at Devil's Back, Kings County, are stocking up with 100 breeding ewes. They are investing $600.00 in 10 pure bred Shrop ewes and two pure bred Shrop rams. Big money, but they are cut for the best.

Country drovers say "That in those districts where the use of pure bred rams has become general, we find a marked improvement in the mutton qualities of the lambs. This is most marked where rams of the Down breeds have been used."

There will be a scramble for pure bred stud sheep later on. Better get your order in early. The early bird gets the good ram.

Prof. Barton says "A pure bred ram is at least half the flock and if a good one, is a whole lot more than a half."

N. B. farmers should keep an eye on the quality as well as doubling the quantity of sheep in the province. Buy a good ram.

Thomas Tetherington,
Supt. of Livestock.

CARE AND REPAIR OF PLOUGHS

Probably no implement used on the farm receives a greater measure of abuse, or as little attention to its proper care, operation and repair, as the plough. To quote a recent writer on machinery: "The plough is the basic tillage tool, the fundamental farm implement. It is not merely a tool for inverting the furrow slice, but it is the most efficient pulverizer of the soil in use. As the moldboard turns the furow, each particle of soil is forced to slip against the particle adjoining, a process which results in a tilth that no other single operation approaches. The general impression prevails that the plough is a simple tool, requiring but little adjustment and less care. This is far from the truth, however. Without question it is the most complex tool on the farm, in that it requires the greatest skill for adjustments, the grain-binder and the gasoline engine not excepted. More effort has been expended in the slow process of development of this seemingly simple tool than in that of any other impdement on the farm. Careful study of its construction, adjustment, and use will be amply rewarded.

This useful implement should not be allowed to remain in out-of-the-way places subject to deterioration by weather conditions, but should be housed properly when not in use. When laid by, it should be stored in a dry place away from contact with the ground and the bright parts coated with grease to prevent rust. Once the moldboard share and landside have become pitted with rust an efficient job of ploughing cannot be done until the corroded parts again have acquired a polish by use. In overhauling, the following scheme is suggested:—

Repairing a Walking Plough

Share.—If chilled cast iron and badly worn, renew. If steel and badly worn, should be sharpened, bearing at wing three-quarters of an inch for 10-inch bottom to one and a quarter inches for 16-inch bottom; vertical suction one-eighth inch; horizontal suction, one-eighth to one-quarter inch.

Landside.—If badly worn and detachable sole is provided, replace sole, otherwise it will be necessary to renew landside.

Moldboard.—Usually in two parts, shin and moldboard proper. If shin be present and badly worn, renew. See that moldboard is bolted tight to frog.

Barcing.—If loose, tighten up connections.

Handles.—If loose, tighten up bolts so that they are attached rigidly to bottom and see that bracing is tight.

Beam.—If loose, see that bolts to frog are tight.

Gauge Wheel.—Examine bearings and if badly worn replace with new. If plain bearings, do not lubricate. See that gauge-wheel standard is bolted rigidly to beam.

Jointer.—Examine point, if badly worn and if chilled cast iron, renew; if steel, it may be sharpened. See that it is bolted rigidly to the beam.

Rolling Coulter.—Seldom used on hand ploughs but if present examine the coulter-wheel bearing and if badly worn, renew. See that the standard is attached rigidly to the beam.

Fin or Hanging Coulter.—Should be attached rigidly to the beam and sharpened if worn.

Adjustments

Depth of furrow.—Made by raising or lowering the clevis or bridle on end of beam. This also may be regulated slightly by the gauge wheel where wide and frequent variations in soil conditions prevail. The gauge wheel should not be used where the soil conditions are uniform, except in very stony soil, as it increases the draft of the plough. In any case, there should not be excessive bearing pressure on the gauge wheel, the function of this wheel being to prevent ploughing at a greater than the desired depth when passing from a firm and hard soil to one of more friable nature.

Width of furrow.—Made by shifting the hitch on the clevis or bridle to or from land according to whether a greater or less width of furrow slice is desired. In using more than two horses this also may be regulated to some extent by the gauge wheel if this wheel has a standard which may be adjusted to lead to or from lanad.

Handles.—Should be adjusted to suit height of operator.

Jointer.—Should be set so that its point is just above or just back of the point of the share, to run one and a half to two inches deep and slightly to the inside of the shin of the plough.

Coulter.—If used, it should be set in a position similar to the jointer except that it should run about half the depth of the furrow. A rolling coulter does not, however, take the place of a jointer. The functions of the two attachments differ in that the function of the jointer is to turn under a small furrow slice ahead of the furrow proper, so that a smoother job of ploughing results and, that of the rolling coulter to cut tough grass roots and surface trash, so that they may be covered more efficiently by the furrow slice.

Hitch.—The theoretical line of draft originates at a point about two inches from the mold board side of the ship, just above the junction of the shin and moldboard. This line should pass through the hitch at the beam clevis and end at a point midway between the sort tug rings at the hames. Anf variation from this line will influence the ploughing, such as too short or too long traces, short hip straps, etc. If this line be straight and the reins adjusted properly, the plough properly set for depth and width required no effort of the operator is neeeded in guiding, except to steady the plough in a proper running position when obstacles are encountered.

Repairs for Sulky and Gang Ploughs

Wheel bearings.—Take down, clean with cloths saturated with kerosene oil, make adjustments for wear if provided for, and repack with heavy grease before assembling.

Frame.—Examine for loose bolts and connections and take them up.

Landing and lifting levers.—See that all connections are tight and take up lost motion if possible.

Beam and frog.—Examine for loose bolts and connection and tighten if present.

Share.—If worn, replace or sharpen.

Landside.—If worn and has removable sole, replace the sole, otherwise replace the landside.

Coulter.—Rolling coulter usually is used. Examine the bearings and renew if necessary. See that coulter standard is attached rigidly to the beam.

Adjustments

Depth.—Regulated by raising or lowering the bottom, in relation to the frame. Suction as applied to sulky or gang plows is the distance of the back end of the landside from the floor with the point and wing of the share resting on the floor. This is about one-half inch for most ploughs though it may vary for different lengths of landsides.

Width.—Regulated by adjusting the hitch to or from land on the frame. It may be regulated also to some extent by "landing" the front furrow wheels.

Jointer.—If used, it should be set so that its point is just above and just back of the point of the share, to run one-and-a-half to two inches deep and slightly to the landside of the shin of the plough.

Coulter.—Should be set half the depth of the furrow back of the point of the share and slightly to the landside of the shin. If used, in connection with a jointer, it should be set ahead of it.

Wheels.—The land wheel should travel directly to the front of and parallel with the furrows. The front furrow wheel is given a small lead from the land, likewise the erar furrow wheel. The rear furrow wheel should run one or two inches outside the landside of the plough.

Hitch.—In anay wheel plough the load should be carried on the wheels a smuch as possible to reduce the draft. The driver may test this by dismounting while the plough is under way and taking hold of the frame at the front wheel and sliding it sidewise, and doing likewise at the rear furrow wheel. If equal resistance to side motion be encountered it is reasonable to assume that all the load is carried on the wheels. The load may be equalized by raising the point of the hitch or lengthening the traces.

Repairs for Disc Ploughs

The general features of disc ploughs are the same as in other ploughs except that the bottoms are replaced bf disc.

Refer to sulky and gang ploughs and examine:—

Disc bearings.—Take donw, clean with kerosene, replace the worn parts, and assemble with sufficient grease to pack the bearings properly.

Disc.—Sharpen or replace if badly worn.

Scrapers.—See that all connections are tight and if the scrapers are badly worn, renew them.—Farm Implement News.

The advertising columns contain the business news of the country. They are a mine that the buyer will work diligently before he buys. It is up to the seller to get an announcement of his wares where they will attract attention. Hiding one's light under a bushel was condemned in holy writ. It has never become popular, because it is contrary to good business principles.

HORTICULTURE

CONTROL ONION DISEASES WITH EFFECTIVE SPRAYS

There are three insect pests, namely thrips, mangots, and cut worms, which often cause considerable loss to onion growers.

The onion thrips chafes off the epidermis of the leaves, principally at their base, producing yellowish, gray irregular spots on the leaves, later causing the entire leaf to dry up and die. In order to spray onion thrips successfully, high pressure (at least 100 lb.) and a fine mist-like spray which can be directed into the base of the onion leaves are necessary. A gasoline outfit or good hand pump outfit equipped with a long line of hose and extension rod is the most satisfactory type that has been used thus far. The following spray material is very efficient if it comes in actual contact with the insect:—concentrated nicotine sulphate, 5 oz.; whale oil soap, 4 lb.; water, 50 gals. The spray should be applied when the thrips fire appear and the onions are small and easily sprayed. It will probably have to be repeated two or three times at intervals of ten days in order to destroy succeeding generations as they hatch.

The onion fly lays its eggs in the sheath of the onion when the plants are very small. The eggs hatch in about 10 days and the maggots burrow into the bulbs of the onion, causing the loss of the plant. Sometimes whole fields are thus ruined. A second and sometimes a third brood appears later in the season. Field hygiene is especially important in controlling onion maggots. A new method of control devised at the Wisconsin Experiment Station is claimed to give excellent results. This treatment, called the "poison bait spray," destroys the flies which lay the eggs. It is used as follows: as soon as the onion seedlings appear, the first spray should be applied, and it should be repeated at intervals of five days or a week during the period when the flies are present. The spray consists of one ounce of sodium arsenite, 2½ quarts of molasses and 5 gals. of water. The arsenite should be dissolved in boiling water and the molasses added and thoroughly mixed. This bait must be applied, by means of a whisk or broom or of a spray outfit with a coarse nozzle, in large drops along the rows sothat the flies can drink it.

After onions have become infested with maggots, there is nothing that will remedy the difficulty that season, but infected plants should be promptly removed and burned in order to reduce the number of insects that will appear the following season, and then the poisoned bail applied in time to destroy the flies before they can lay their eggs.

Cutworms cut off the young plants at the surface of the ground. They can be controlled by the use of poisoned bait prepared as follows: Mix 50 lbs. of wheat bran or middlings, 2 lbs. of Paris green and 6 finely chopped oranges or lemons. Then add enough cheap molasses and a little water and place the mixture around the plants.

Onion mildew is a most serious disease and may be controlled by spraying with Bordeaux mixture.

GRAFTING

On many farms, the apple orchards might be greatly and permanently improved by grafting some of the trees. In addition to cetrain incidental benefits, there are 3 special purposes which this work can be made to serve. These are as follows:

First: It can be made to prolong the usefulness of trees which, though fairly vigorous, are past middle life and would produce more and better fruit if they were caused to form new heads. This change cannot be made at once, but it may be effected in five or six years with very large trees, or in three or four years with smaller ones. Large orchards have been successfully "renovated" in this way. It is not the ideal method for maintaining an orchard, but it may be the wisest treatment for one that has been neglected. The better practice is to plant at brief intervals and thus have young trees coming into bearing while the mature ones are beginning to fail. Under this method, individual trees will perish, but the orchard as a whole will never grow old.

Second: By means of grafting, new varieties can be introduced without unduly increasing the number of trees in the orchard. When apples are grown for the market, the number of varieties should be small, but when they are grown for the family, there should be a wide range. A few large trees may be grafted with from two to four kinds each. The quantity of any single variety that is grown in this way will be small, but it probably will be sufficient for home use. This method will furnish first-haid information regarding the appearance and quality of applies of several and widely different kinds, and will enable each member of the household to have his or her favorite sort.

Third: Grafting may be used to improve the quality of fruit in orchards for which the varieties were not wisely chosen. Trees which yield fruit of only moderate quality may be made to produce a much finer grade. Then, too, shy bearers may be grafted with more prolific sorts, and varieties of which the fruit is excellent, but the trees are weak, can be grown in more vigorous stocks.

The art of grafting is easily learned. Every boy who works on a farm should master it. He will thereby gain a new interest in the home orchard and form a new attachment for the farm. In every farming section there are experienced men who would cheerfully show any boy in the neighborhood how th work is done; or the art can be learned from books or papers. The first effort should be on an inferior tree. My first work in this line was on an old and large R. I. Greening tree. It was a great many years ago, but I well remember the pleasure it gave me, and my satisfaction with its success.

Largely because of this experience and also because of the possibilities for good that such knowledge brings, I favor giving every farmer boy an opportunity to learn how to graft trees in the apple orchard, and thus become able to benefit himself and others in later years.—J. E. R.

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RASPBERRY LEAF CURL SYMPTOMS AND CONTROL

Raspberry leaf curl has been known for some time both under this name, as well as under the name of raspberry yellows. Since the curling of the leaves is the most outstanding feature in connection with the disease, it is preferable to use the term raspberry leaf curl.

The disease affects the leaves and shoots and is often confined to a single bush or part of a bush, some of the shoots being perfectly normal and others with the leaves affected. The affected shoots, instead of producing normal large, broad leaves, bear leaves which are conspicuously small and badly curled downwards. In the early stages this symptom is not so pronounced, and while a small amount of curling may occur then, the disease is more noticeable on account of the yellowing which takes place during the summer because of the unhealthy state of the foliage. Since yellowing of the leaves may be due to a number of other causes, such as wet feet, poor soil, drought, etc., it is best to determine the disease mainly by the leaf curl symptoms.

In the advanced stages, the canes bear no fruit. When first attacked, they flower almost normally, but the fruit is small and dry and shrivels up before ripening, so that little or no fruit is ever produced from an infected bush. Of the three varieties commonly grown, Cuthbert, Marlborough and Herbert, the Herbert seems to be freest from the disease. The other two varieties are quite susceptible, but one rarely sees signs of leaf curl in the Herbrt.

So far as is known the disease is not due to any parasitic organism. It apparently belongs to that type of trouble which has been called physiological disease, and could therefore be put into the same class with peach yellows and little peach, and the mosaic diseases of tomatoes, tobacco, potatoes, and so forth. No records are available as to how the disease is brought into the field in the first place, nor how it is transmitted from one point to another. It undoubtedly does spread once it becomes established in a plantation, and many fine plantations are known to have been greatly injured by the presence of a large number of leaf curl plants. If the disease corresponds closely with the mosaic or yellow disease, one would suspect that it is carried either by insects or pruning operations.

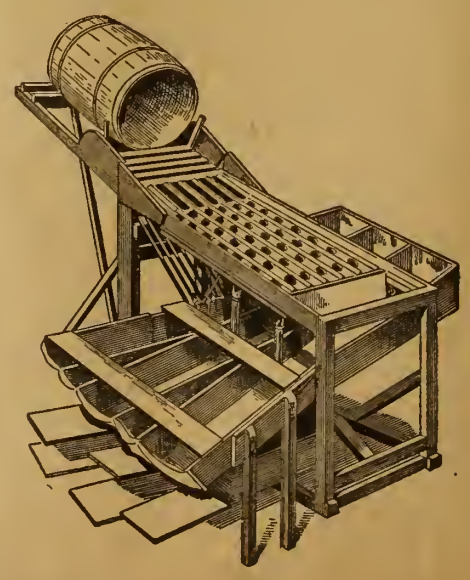
Although too little is known about leaf curl to advise a sure means of control, one should always remove the affected plants as soon as they show signs of disease. They are of no use in any case and are likely to spread the disease to other parts or the plantation. In taking out leaf curl plants, one should be careful to get the whole of the root system, otherwise the parts that are left will start to grow and produce new shoots which will also show leaf curl. It is possible that some of our leaf curl originates from nursery cuttings and some care should be taken when setting out a new plantation, to avoid the disease.

METHODS OF RENEWING A STRAWBERRY PLANTATION

There are several methods of renewing a strawberry bed, and these depend on the way the plants were originally set. Most garden strawberry patches are originally set and trained for the matted row system, but if neglected they become a matted bed. This reduces size, flavor, and quality in th berries, and makes it difficult to pick them. To overcome, or guard against this condition, the plants must be kept thinned out and healthy.

For a small garden patch, thinning is not a difficult task, and consists only in removing the excess plants. This is done by the use of hand tools such as the common wheel hoe or the hand hoe. Some sort of cultivator should

The Elderkin Fruit Sizer and Grader



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be used first to tear up as many plants as possible, then the remaining ones that are not to be saved are cut out by hand. The plants to be saved are left in a narrow row where the original row was planted. From this row, the weak and old plants are removed and destroyed. thus leaving only the strongest and most vigorous plants properly spaced form the basis of the new bed.

The plants selected to remain should be young ones, and preferably those that have never borne a crop.

The cultivation and fertilization operations are the same as for a new plantation.

TRAINING AND PRUNING GARDEN TOMATO PLANTS

When growing tomatoes in small quantities, better results are obtained if the tomato vine is trained to a stake or to a hoop elevated on three stakes and the vine tied to the hoop. This lifts the vine above the ground and permits a free circulation of the air, according to Dr. E. P. Sandsten, of the State Agricultural College. Dr. Sandsten says:

"By removing a portion of the branches of the plants, greater growth is obtained on the main stem and the tomatoes produced are larger and will mature earlier than if the vine is left to grow normally.

"It should be understood that a plant treated as indicated above does not produec as heavy a crop as one left to grow naturally, but for early fruit, this method should be adopted.

"It is not advisable to prune the tomato vine so as to expose the fruit to the sun. Exposed fruit will color a little earlier than when grown in the shade, but the quality will be considerable poorer and the fruit will ripen permaturely. Much better results are obtained by permitting the foliage to shade the fruit thruout the growing season."

PRUNING GOOSEBERRIES

When pruning gooseberries and currants it is well to remember that the finer and most fruit is born on the younger wood. Two-year-old wood is at its best. Four-year-old wood is not nearly as good. Cut off the oldest canes each year at the surface of the ground and thin out the weakest of the young growth, leaving the stouter shoots for renewal. Eight to twelve canes make a bush of ample proportions.

Growers sometimes clip back the annual growth. The effect of this practice is to increase the denseness of the bushes. This is not desirable, as the bushes are generally sufficiently crowded and difficult to pick. Renewal can be secured most effectively by saving some of the young sprouts which spring up from the roots each year.

SUMMER PRUNING

The question is asked many times each season: "Is the summer pruning of fruit trees practicable and advisable?"

The answer is no, except in a limited way. Small branches and water sprouts may be removed without harm to the trees, but the cutting off of large branches is debilitating. It may be said in favor of summer pruning that wounds made in the growing season heal quickly, and it has been asserted that summer pruning hastens fruit bearing, but this is not fully settled as a matter of fact.

In practice pruning when the leaves are on is very difficult. It cannot be done with a fair degree of spced except in the case of removal of dead branches. When the leaves are in the way one cannot see which branches should be removed without consuming much time; besides, after a branch with leaves on is cut off its removal from the tree is difficult. When the trees are bare and the weathes mild is the only psarticable time to prune fruit trees.—Ohio Ex. Station.

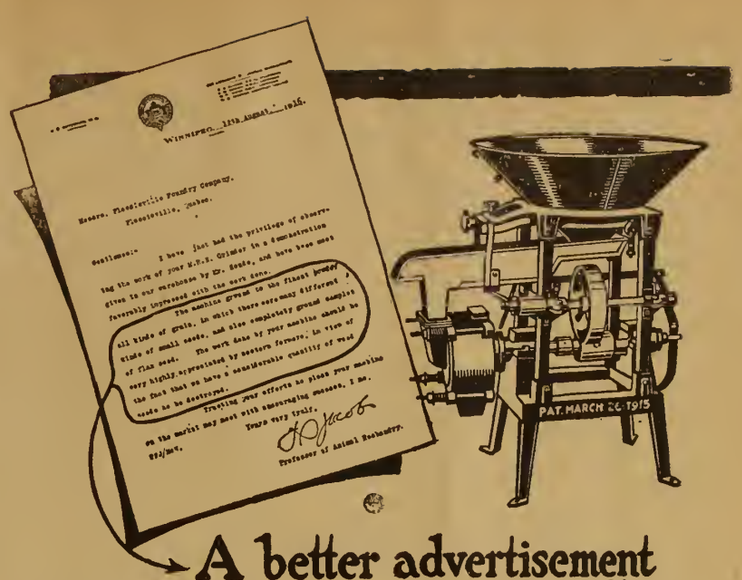
MORE MANURE FOR THE ORCHARD

The crying weakness of most farm apple orchards is lack of fertility. Heavy crops of apples, whether clean or scabby, take a lot out of the soil, and the trees are bound to show poverty in foliage, with consequent lack of fruit if manure is not applied regularly, in sufficient quantity. If we were obliged to grow one crop year after year on the same piece of land, we would never be able to satisfy ourselves with the quantity of manure applied. no matter how great our source of supply happened to be, and we all know that anfthing short of a Herculean effort to keep up fertility would mean a steadily diminishing crop.

The poor old apple orchard is struggling to produce the same crop year in and year out, the averaye attempts at putting back the fertility are far short of an effort that would do credit to Hercules. It pays well to apply manure to the orchards in the winter time. Chemical fertilizers are useful, but in my opinion they cannot take the place of barnyard manure; I like to use both, but the price of the chemicals at present is an important consideration. The only economy that should be used in manuring is to place the material only over the feeding roots of the trees, keeping about five feet away from the trunks in all directions.—Dr. A. J. Grant, Thedford, Ont.

THE BEAUTY OF WEEDS

The destruction of weeds is, of course, one of the great objects of the summer fallow. Doctors tell us that the laws of disease, rightly understood, are not less beautiful than the laws of health, and there is a varied beauty in a crop of deeds that will scarcely be found in a crop of wheat. Some weeds adorn themselves with flowers of flaming yellow, the burr and the cockle put forth gentle little buds of blue, even the stink-weed has a silver tip, and the leaves of the pigweed are glossy and smooth. To the good farmer, however, their beauty appears like that of the spotted snake. hiding venom under its gloss, and when the plowshare has gone through them and the black soil has rolled over them, the field has far more beauty for his eye. This illustrates again the truism that the real beauty of anything consists not so much in color or form, as in its fitness for the purpose for which it is intended. The curve in the moldboard of a plow has a beauty of its own, but the same curve in the landside would be a detestable ugliness, and so it is that, however beautiful a field of flowering weeds might appear to an artist. to a farmer, the sight of their roots turned up to the sun has a far more bewitching loveliness.



Facsimile copy of letter from Professor of Animal Husbandry at Manitoba Agricultural College endorsing the M-re.

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The machine ground to the finest powder all kinds of grain, in which there were many different kinds of small seeds, and also completely ground samples of flax seed. The work done by your machine should be very highly appreciated by western farmers, in view of the fact that we have a considerable quantity of weed seeds to be destroyed.

Trusting your efforts to place your machine on the market may meet with encouraging success, I am,

Yours very truly,
H. JACOBS,
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The M-re is more Economical in Every Way

Not only does it give a better chop but its output is equal to that of the best steel plate grinders. Furthermore, the emery wheels will last three or four times as long as steel plates and can be dressed in a few minutes, giving practically a new set of plates. The M-re is the only grinder that will completely destroy all wild seeds.

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We will place the M-re Grain Grinder on trial upon your farm, so that you may put it to as severe and thorough a test as you like and if it does not do all that we claim, you have only to return it at our expense and get your money back.

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BUMPER GRAIN CROP

Reports to the Maritime Farmer from all sections indicate that the biggest grain crop in the history of the Maritime Provinces is being harvested. From every section comes rosy and encouraging reports. The only set-back has been to the buckwheat crop, which in some sections was affected by the August frost. Otherwise the outlook is bright. New Brunswick expects to harvest at least 800,000 bushels of wheat of an exceptionally high grade. The oat crop is a booster and will help in large measure to solve the feed problem. Prince Edward Island and Nova Scotia are equally well situated. The hay crop, unfortunately, is not what it might be in some sections, the estimate running as low as a sixty per cent crop in places. From other sections, however, the reports are favorable.

DAIRYING.

SOME COMMON DISEASES AMONG COWS AND HOW THEY CAN BE CONTROLLED

A very common disease amongst cows is an abnormal appetite for foreign bodies and indigestible substances. Cows so affected will eat old shoes, rags, wire, manure, stalks and any other indigestible substance that they happen to procure. This affects the family cow much more often than it does cows that are in a herd. It is supposed by most authorities that this condition is due to a slight derangement of the digestife system. Cows will leave good nutritious feed of the very best quality to eat stalks and manure and seem to relish them. This would indicate that the condition is due to an unbalanced ration.

As soon as it is noticed in a cow special attention should be paiad to the ration, says Dr. G. H. Conn. A liberal allowance of salt will sometimes remedy the trouble, but in case it does not, one ounce of tincture of iodine should be placed in an eight ounce bottle and the remainder filled with glycerine. Give the cow one ounce of this mixture night and morning. If this condition is not corrected in some cows they will become unthrifty, hide bound, lose flesh and frequently suffer from a complication of diseases. Cows that are so affected should have the mouth examined for any possible injuries.

Overfeeding

Overfeeding usually affects the family cow, especially the city-owned cow. Most of these cases do not present any predominating symptoms by which the condition may diagnosed. The feed that such cows receive and the manner in which they receive it warrants us in diagnosing all cases that show no pronounced symptoms as this condition until something shows up that enables us to make a correct diagnosis. We are justified in treating all obscure diseases of city cows as overfeeding until recovery takes place or until symptoms show themselves by which the condition may be recognized.

The first and most important thing in the treatment is the taking away of all feed. Allow water often but in small quantities. Give a laxative of epsom salts and enforce starvation until recovery.

Loss of Appetite

The animal usually, if not always, fails to present any symptoms by which the veterinarian can arrive at a solution of the cause of the trouble. The cow just seems unnatural and does not have the appetite that she should have, sometimes failing to eat at all. As nothing else seems wrong the owner often fails to call the veterinarian until two or three days have elapsed. Even after careful examination one wil be unable to find anything that would indicate that the cow is sick . It is due probably to a condition of the nervous system that governs the digestive apparatus, possibly a temporary paralysis. The cow refuses to eat and it may be anywhere from two or three days to a couple of weeks before she resumes eating.

Our treatment for this condition must necessarily be experimental since we do not know the exact cause o fthe condition, but our best results have come from the use of the following: One ounce of fluid extract or nux vomica with three ounces of dilute hydrochloric acid, one tablespoonful of this mixture to be given in a half-pint of water three times each day.

Dyspepsia

Dyspepsia is also known as indigestion or gastro-intestinal catarrh. It may be the result of a varied and widely different set of conditions—irritant or spoiled foods; foods that are binding in nature, thus hindering the secretion of digestive fluids and preventing the absorption of the nutritive elements of the food that is eaten; feed that is too fibrous and that may contain too much indigestible matter, or feed that is used over too long a period of time and in too large quantities. Lack of exercise will also predispose to this condition.

The animal has an irregular appetite, is listless and the eyes seem sunken. Constipation and diarrhoea alternate and the manure that is passed is usually dark and foul-smelling and in small quantities only. Occasionally the animal may be heard to grunt and chews the cud only at intervals. The passage of manure almost ceases, but small quantities of mucus are passed. The ears and the base of the horns are alternately hot and cold and the animal lies down most of the time. She may carry a slight temperature. The animal gradually gets weaker and loses flesh rapidly; finally the milk flow has entirely ceased and the cow reels and staggers when she attempts to walk. In many cases a brain disturbance is noticed at about this time, due no doubt to the pain and general weakness and to the poisonous products that are absorbed from the digestive tract.

The very best and most appetizing feed should be offered several times each day and if the animal eats at all care should be taken that the digestive organs are not overworked; water should be given and should have the chill removed. Treatment of this condition is of grave importance and should be prescribed by a veterinarian after he has examined the case. Possibly the treatment prescribed for loss of appetite would give as good results in the majority of these cases as anything that we might be able to suggest or advise.

Colic

This condition is most often produced by drinking freely of cold water, and as the animal usually suffers a chill shortly after drinking and immediately before the colic starts, the cause of this condition cannot be doubted.

The animal begins by kicking at the abdomen with the hind feet and stepping from side to side in the stall. The pain becomes very severe and the animal will throw itself to the floor. In some cases bloating is present.

In mild cases walking exercise for ten minutes or so will sometimes relieve the condition. A tablespoonful of tincture of capsicum woll usually be all that is required. It should be given with milk or water as a drench. If a vetreinarian can be had and no bloat is present, a hypodermic injection of morphine or some other hynotic is al that is required.

Dysentery

Dysentery is, simply speaking, a severe diarrhoea, which may be caused by the eating of irritating or spoiled feed, exposure to inclement weather, parasites, indigestion and the like.

At first the stools are soft, but gradually get watery, often foul-smelling, and are sometimes streaked with blood. The animal has an anxious expression, is haggard in appearance, is weak, and may show some evidence of abdomina lpain. The appetite is lost or is irregular and the animal rapidly weakens and loses flesh. If the condition is not remedied early it may result in death.

If the cause is due to the feed or to parasites, cure can be made either by changing the feed or by the administration of suitable vermifuges to cause destruction of the parasites. A dose of castor or linseed oil should be given and should be fololwed by two or three tablespoonfuls of the following mixture: Tannic acid one ounce, pulverized sulphate of iron two ounces and sodium salicylate two ounces, all thoroughly mixed. This should be given in a solution of water, about one pint being sufficient.—Dr. G. H. Conn.

THE VALUE OF SEPARATOR SKIM MILK AS A FEED FOR PIGS

The Department at Ottawa recently issued a circular calling attention to the value of skim milk as a pig feed.

The following from W. E. Graves of The De Laval Separator Company is interesting in connection with this circular and the effort being made for "More pork."

We know today that nothing will make the progessive farmer so independent, or give him such a steady and unfailing income, as keeping properly feeding and caring for a good herd of cows, raising the choice calves and feeding the remainedr of the skim

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IT has been calculated that with an engine you can grind your grain for less than 2 cents per cwt., fill your silo for about $2.50, separate and churn from 12 cows for 1¼ cents per day, and pump your water for about a cent a day. Unlike other kinds of power, the Engine stops being an expense the moment you finish the job. These figures are based on gasoline as fuel. *Kerosene is even cheaper*—if used in a *real* Kerosene burning engine. The

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is a *true* coal oil burning engine, designed for coal oil, not adapted. Built on principles applying particularly to *kerosene*, it gets the last ounce of power out of every gallon with minimum carbon trouble.

No adapted engine can get the vaporized kerosene into the combustion chamber warm enough because such engines are built on gasoline principles. But the Renfrew is a *real* Kerosene burner; it gets the vaporized fuel to the right place *quick and hot*. Thus it gets the full power from both the compression and explosion of the vapor.

The Real kerosene engine demands a fat spark, must have it. The Webster oscillating magneto and igniter is designed especially for Kerosene. It provides the proper spark. The special kerosene mixer equipped with auxiliary air valve, ensures properly mixed charge for either full or light loads. In short, the Renfrew is built for 100 per cent. Kerosene efficiency—and *gets it*.

The Renfrew is available in sizes from 3 to 14 h.p. on skids, or mounted on wheels. Our calague describes these and many other interesting features Write for it today.

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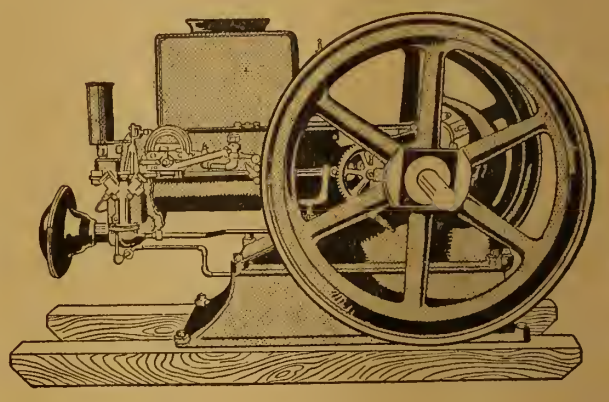
Gasoline Engine
1½ h.p.

No need for special shafting for reducing speed; special secondary pulley reduces speed for pump, grindstone or cream separator. Write for catalogue.



The Renfrew Machinery Company, Limited

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milk, together with about all the other by-products raised on the farm, to a bunch of pigs.

We have been told of the profit from the good old cow, the foundation of thi sbusiness—how she restores fertility to the soil and how well it pays to raise her offspring. But of the "pig end" we have heard but ltle, and that is the end I am going to say a few words about. Here in the Middle West the pig is a very important part of the farming business. Many a cream separator has been sold because the wise buyer wanted the warm, fresh skim-milk to make his little pigs grow and thrive.

Today we are facing this proposition: In every place where milk is produced in quantities, condensaries are springing up like mushrooms owing to the very high prices of condensed milk. While this condition may be only temporary, these condensaries are paying very high prices for milk and are telling the cow owner that the skim milk is of but little value to him on the farm. If we expect to sell cream separators we must do something to offset this argument, and right here is where the pig comes in.

The market price of heavy hogs is $18 to $20 per 100 pounds, live weight, and corn is $2 a bushel. One of our experiment stations, a short time ago, took 16 pigs from two litters and divided them into two pens, 8 pigs in each, as nearly equal as to size and quality as possible, and started to feed them. Ten pigs in one pen were fed in the proportion of 3 bushels of corn, with water and slop, but no skim-milk and the others were given a ration in the proportion of 2 bushels of corn and 100 pounds of fresh, warm skim-milk from the cream separator. When they had rearhed the weight of about 125 pounds the pigs which had 2 bushels of corn and skim milk were more thrifty, looked better and weighed on an average of 12 pounds more than the pigs that had been fed 3 bushels of corn and no skim milk. In other words, 100 pounds of skim-milk had produced better results than one bushel of corn and was therefore worth as feed more than $2 the price of the corn.

One reason why the skim-milk is better as a feed for young pigs is that it more nearly approaches their natural food. When he young pig is weaned and given strong, coarse grain, his digestive system has not become strong enough to absorb it properly and he becomes stunted in growth for a time—sometimes permanently so. But if he can have plenty of good, warm separator skim-milk, with all its natural body-building properties, he will grow right along and make a good thrifty hog. No farm animal ever appreciates his food or shows more growth in return for proper food than the pig.

How to Feed Little Pigs

Every farmer who keeps cows should have from two to ten brood sows, the number depending upon the quantity of skim-milk he has to feed. These sows should be bred to a good sire so that they will farrow at suitable times in the spring and fall. These mother pigs should not be fed heavy, heating or fattening foods previous to farrowing. Give them a warm slop of skim-milk and bran or middlings, with some green food if possible. At the time of farrowing they should be watched closely for a few days so that they do not injure the young pigs. This, furthermore, will give you a chance to become acquainted with them.

The average litter will be from 7 to 15 and all can be saved with care. When the little pigs are about 3 weeks old make a hole in the pen where they can get out and away from their mother. Then put agout two quarts of separator milk in a shallow dish where they can get to it, and see what will happen. They will take one sniff of it and if they can they will all be in the pan the next minute. In 3 weeks they will be waiting for you and the skim-milk. No need to put up a sign "Watch Us Grow," for you can see it every day. If you follow this course you have taught them to eat before they are weaned and by feeding them the same kind of food, they grow right along and are never stunted.

THE CALIFORNIA DAIRY COW COMPETITION

Another great breed victory has been won by the pure bred Holstein-Friesian and her grade sister in the California State Dairy Cow Competition. This competition has been running eighteen months but only ten months production was taken so that this gave the competing animals time to freshen again somewhere near the end of the year, and yet make a large record.

Two hundred and forty-three animals completed the ten months test. Of the lfteen cows producing more than seven hundred pounds of butterfat in the ten months no less than thirteen were Holsteins. First, second, third and fourth places are held by registered Holstein-Friesians, a Guernsey comes fifth; sixth and seventh places are taken by Holsteins while a Holstein grade comes eighth and the best our Jersey friends could do is tenth, as the report shows, she made a very creditable showing both for milk and butterfat.

They certainly grow some great cows in California and all great California cows are not black and white, but this competition again shows what has been demonstrated many times before, and that is, given an equal chance, the Holstein cow stands supreme as a producer of butterfat, and as a producer of milk, she stands alone.

Some of the honors may be summarized as follows:

1. The cow which made the most butterfat in ten months was a Holstein.
2. The cow which made the most milk in ten months was a Holstein.
3. The cows which won the two University of California gold medals for butterfat production were Holsteins.
4. The grade cow which made the most butterfat in 10 months was a Holstein as was also the second highest grade.
5. The grade herd from 10 to 25 cows which made the highest average for butterfat for ten months was a Holstein herd.
6. The grade herd of more than 25 cows which made the highest average for butterfat for ten months was a Holstein herd.
7. The herd of five cows (registered) which made the highest butterfat average for ten months was a Holstein herd.
8. The herd of five cows (grade) which made the highest butterfat average for ten months was a Holstein herd.
9. Nearly half of the monthly prizes for average butterfat production of herds were won by Holsteins.—Holstein-Friesian Association.

MORE FLY CHASERS FOR THE DAIRY

The best method of combating flies is to prevent their breeding. Two kinds of flies are especially annoving to the dairyman. The first, the house fly breeds in filth and feeds on spilled milk and the like. They do not cause cattle serious discomfrot, but are a continual source of danger to the milk supply. Therefore the man who is desirous of supplying his customers with the best grade of milk should do all in his power to get rid of them.

Careful screening of the barn and manure pit will help, and if the manure pile is occasionally sprayed with a solution of borax, one pound to twelve gallons of water, a decided reduction will be noted. A poison bait composed of one pint forty per cent. formalin, eight pints fresh milk, and eight pints water sprinkled round the stable two or three times daily, will be found satisfactory. Arsenicla poisons are always dangerous when used near a dairy. There are also endless types of traps, most of which are of value if baited with banana peel or a fish head.

The second class of flies is the small black kind. These cause cattle more or less discomfort, and though recent trials show that the effect upon the milk flow has been exaggerated, nevertheless their presence greatly annoys milkers and many sprays have been devised to repel them. The following mixture is valuable and easily prepared: Two gallons creolin, one gallon cottonseed oil, and ten gallons water. Mix thoroughl and apply with a hand sprayer.

Fish oil, tar and the coal-tar derivatives form the basis of most of the sprays. Three parts of fish oil and one part of kerosene, shaken together and applied with a sprayer, is very good. Two pounds of rancid lard, mixed with one pint of kerosene until a creamy mass forms and applied with a cloth or the hand, also gives good results.

One part of crude carbolic acid to ten parts fish oil is also good, but should be applied lightly and without rubbing, as there is danger of blistering if used in quantity. Still another is 100 parts fish oil, 50 parts oil of tar, and 1 part crude carbolic acid. This is a good reliable spray and can be applied with a spray pump without danger. It will often keep the flies away for two days. All sprays have an injurious effect on the coat of the animal and should not be applied to those animals that are tto be used for show purposes. The effcet is not permanent but rather produces a dirty looking skin which is difficult to clean.

When cattle are on pasture and cannot be visited daily, the following spray is excellent, as it lasts several days: Two parts fish oil and one part pine tar. Apply with a paint brush to parts most affected.

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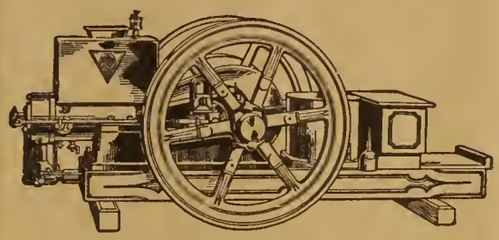

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WHAT IS THE PURE BRED SIRE WORTH?

(By Prof. W. H. Tisdale, University of Saskatchewan, Saskatoon.)

Prices, considered by some as more than fabulous, have been paid during recent years for pure-bred sires, and it would seem that a panic or craze of this kind strikes the livestock world almost periodically. Is it a panic though, and are such prices unjustifiable Results obtained in various cases and under varying conditions would varify the statement that "it is rather difficult to really estimate the true value of a pure-bred sire in the herd or flock."

Whitehall Sultan, one of the greatest Shorthorn bulls in American Shorthorn history sold as a three-year-old for $2,500. Was he worth it? The answer is very definitely given in the estimation that 60 per cent. of all the Ssorthorn winners at the International for a period of fiv eyears were strong in his blood. He was the sire, in his time, of 82 bulls and 51 heifers. Eighty of these bulls sold at an average of $915, or a total of $73.200. Thirty-six of the heifers sold at an average of $661, a total of $23,800, thus making a totaal of $97,000 for the get of this wonderful bull. Was he worth $2.500 as a three-year-old? Yes, and twenty times that amount. Any good bull in a pure-bred herd is worth that money if he has ample oportunity to make his influence felt.

The majority, however, are more interested in th eproduction of livestock for commercial purposes rather than for breeding and for them the question as to the sire's value must be answered in another way. An answer can be found in the increased value at marketable age of the offspring from the pure-bred sire mated with a bunch of common females as compared with the offspring from a common nondescript bull mated with a similar group of females.

A photo accompanying this article shows sire, dam and offspring. Glenmere Proud Lad, standing at the left, is a pure-bred Aberdeen-Angus bull, proud as his name would indicate, masculine, well made, weighing over a ton and covered with a wealth of thick natural fleshing. His breeding lines run pure for generations back and he has the necessary conformation to back them up. The cow standing in the centre, is a common, red, grade Shorthorn of no particular bredeing, rather upstanding, somewhat angular and lacking greatly the make-up of a typical beef animal. In the third animal of this family group, we have the result of mating these two—a polled steer, black in color, low set, blocky and in every respett a creditable butcher's model. At 23 months, he weighed 1,350 pounds, and at 36 months tipped the scales at 1.670 a weight attained in the usual way; running with the dam for seven months and after that fed upon the grains and roughage ordinarily raised on any farm throughout the country. In order to realize the greatest profit, this steer should have been sold, not later than 2½ years of age, but being valuable for demonstration purposes, he was kept until years old, at which age his 1.670 pounds brought 15 cents per pound upon the Winnipeg market, a tota lprice of $250.50.

On the other hand, let us supose that this common grade cow had been bred to a mean, common, scrub bull, weighing 1.300 pounds at maturity, and devoid of any creditable conformation or breeding. What weight could we expect a male calf of such breeding to attain when three years old? At the most, it would keep it hustling to run much over the weight of its sire, 1,300 pounds. This means a difference of 370 pounds in favor of the well-bred steerfi or, in other words, at 15 cents per pound a difference in value of $55.50 between the two. A carload of the 1.670-ponders would help materially in paying the long price for the pure-bred sire.

In the second photo, a very interesting family group is portrayed. The ewe at the left hand side of the group is the mother of the five sheep, they being the offspring of three successive years. She is only a common grade, seven years old at the present time, and cost the University $4.80 along with 100 females of similar breeding and similar price in 1913. Being herself of no particular breeding, the influence of the pure-bred sire, to which she was mated each season, is quite marked in the case of the lambs. They all conform to the particular sire's conformation and breed characteristics. The two wethers at the extreme right are 1916 lambs, two years old at the present time, and have just recently passed over the scales at a combined weight of 400 pounds. They sheared ten pounds of wool each in the spring of 1917, and are carrying at least 12 pounds each this season. The sire was a pure-bred Shropshire of good size and breeding and the medium-sized body and typical Shropshire covering of wool about the head and legs is readily noticed in the case of the grade wethers. In the centre of the group is noted a pair of broad, low down, thick set shearling wethers, the 1917 lambs, sowing every evidence in their makeup and facial characteristics of having been sired by a Southdown ram. Their combined live weights go to make up 250 pounds of real choice lamb, anad they are carrying about 17 pounds of wool between them. This year the old ewe broke away from her record by giving birth to a single lamb only, sired by a pure-bred Hampshire ram. As an individual, however, it bids fair to surpass any one of the other four, weighing 60 pounds at 9 weeks of age. Here, again we find the breed characterictics of the sire showing up very plainly. Besides raising these five lambs in three years, the old ewe has yielded three fleeces weighing a total of 21 pounds during the same period.

Two lessons may be gleaned from this second photo. The first is this, no matter what the breed of the sire used, equally good results were obtained in so far as the particular breed is suited to a certain market requirement. The pure breeding on the part of the sire leads to a satisfactory, uniform result, and it is easily demonstrated that he is a wonderful factor for improvement in the flock.

Secondly, the old ewe has proven clearly that she and others of her kind constitute the best investment that the farmers of this country will ever have the oportunity of making within the next ten or fifteen years. Note in the following summary, the financial returns in this particular case.

Wool

1916	Ewe 7 lbs. at 32c. per lb...	$2.24
1917	Ewe 7 lbs. at 61c. per lb...	4.27
	Two wethers, 20 lbs., at 60c	12.20
1918	Ewe 7 lbs. at 60c. per lb...	4.20
	Two wethers, 24 lbs., at 60s	14.40
	Two wether lambs, 17 lbs., at 60r.	10.20
		$47.51

Mutton and Lamb

2	Two-shear wethers, 400 lbs. Mutton at 15c.....	$60.00
2	one-shear wethers, 250 lbs. mutton, at 16c.	40.00
1	1918 lamb, 60 lbs., lamb at 18c	10.80
		$110.80

The wool easily offsets all cost in connection with the feeding and management of these five sheep from the time the ewe first lambe din the spring of 1916, thus leaving the lamb and mutton as clear profit. This total of $110.80 is not bad profit on an initial investment of $4.80, anad only goes to show the good returns that may be realized fro ma vigorous, healthy farm flock. Of course, it is not to be expected that every ewe in the flock will yield as good returns as this one has done, but a lambing percentage of 100 is not extraordinary, and it is at the same time very remuneratipe. Wool, too, gives every evidence of remaining high in price for several years to come and there is every reason to believe that a few hundred dollars invested in sheep will yield anywhere from 25 to 50 per cent.

THE FEEDING OF CALVES

Giving a calf an extra good start the first six months of its life, and doing so cheaply, is the secret of successful and economical stock-raising. No matter how good the calf at birth, it will be handled at a loss, or more or less seriously handicapped for future usefulness and profit, if not fed carefully and cheaply in its early days.

The present high prices of whole

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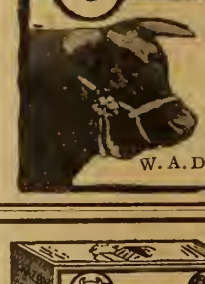

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milk practically exclude this product being used to any extent in calf-rearing, although it is absolutely necessary for the first three or four weeks, if best results are to be obtained. To discover the best substitutes for whole milk and the best methods and practices in calf-feeding, a large number of experiments have, during the past three years, been conducted on the Dominion experimental farms. A few deductions from these experiments are given herewith:—

1. It is more profitable to breed and read good young stock to maturity than to purchase the average cows for sale, which are usually the animals least profitable and desirable in the neighbor's herd.

2. The cheapest way of building up a good herd is to raise it. The feed costs of good rearing in Canada range from $16.00 to $24.30 for six-months' calves, $24.00 to $45.00 for 12-months' calves, and $37.00 to 74.30 for 24-months' heifers, the variation depending on methods of feeding, feeds available and market values of these feeds.

3. Calves of poor type and bereding are not worth rearing, but good calves properly bred will be worth at least 30 per cent. and up to 100 per cent. more than their feed cost at two years of age.

4. Calves of good size, strong constitution and large capacity will, on the same feed, make greater growth and better gains than small, weak, narrow individuals.

5. Good rearing of calves is most profitable, as shown in such results as

Earlier maturity in size.
Earlier maturity in profitable production.
Greater production throughout the whole life time.
More valuable and in greater demand at the highest price.
Healthier stock.
More durable animals.
Better able to consume most profitably all cheap farm-grown roughages, and convert these into milk.

6. The calf reared on its dam costs 25 to 50 per cent. more than the pail-fed calf, and the more productive the cow the greater will be the charges against the calf.

7. Pail-fed calves, reared to six or eight months largely on whole milk, make gains which cost $14.40 to $18.75 per cwt., which is several times the cost when a properly-fed substitute for whole milk is used.

8. Skim-milk fed sweet and at a temperature of about 90 degrees fahr. is the best single substitute for whole milk, and may reach a value of 70 cents per cwt. or more in feeding young calves. However, skim-milk may be improved by the addition of a good cream substitute such as flax-seed jelly, oatmeal, or a well-balanced calf meal.

9. Buttermilk, if fed uniformly as to acidity and temperature, may have a slightly greater value than skim-milk. Great caution must, however, be taken to start calves at a greater age and very gradually.

10. In feeding calves to six or eight months of age on rations composed largely of skim-milk or buttermilk and a good cream substitute, gains may be made at a cost of feed amounting to from $2.00 to $7.15 per cwt., this amount varying with the character and price of meal and the ruggedness and thrift of the calves.

11. If well started on mother's milk, calves may be well reared on calf meals without whole or skim-milk. However, greater care and attention must be paid to these calves, and even so, gains cost from $5.00 to $15.41 per cwt., or nearly double the cost where some skim-milk is used.

12. In order to rear the best and cheapest cows, all pail-fed calves should be taught to eat, at an early age, cheap and nutritious farm-grown roughages and grains. The best roughages are grass, fine alfalfa or clover hay, swede turnips, mangels and ensilage. Of the grains, oats and barley are unexcelled.

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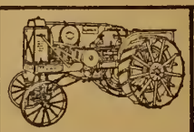
A Correct Lubricant for every Farm Machine



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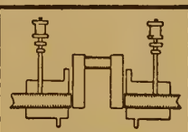

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LIVESTOCK NOTES

H. S. Arkell, Dominion Livestock Commissioner says: "That no doubt sheep prices have reached their maximum, yet I cannot see any reason for any material decline in the price of sheep products for at least ten years.

Tabor C. Everett of Fredericton reports that his sheep averaged him about $6.00 per head for wool this year. Wouldn't have got it if he hadn't marketed co-operatively. Took a lot of coaxing to get him to do it too—won't take any next year.

One of the signs of the times is the number of New Brunswick men embarking in the pure-bred sheep business. The latest are: Dr. John Wier of Doaktown—he is securing stock from Jas. I. Stewart, Amherst Point, Nova Scotia—none better either; The Deilbac Sheep Products Company are putting in ten pure bred ewes, fancy stuff from up country; The Allison people at Rothesay will add a few to their flocks; S. B. Hathaway of Fredericton is asking for quotations on Oxfords; L. C. Box of the Experimental Farm plans to begin with a foundation of 10 Cheviots.

W. H. Venning, Sussex, has some Leicester ram lambs for sale. Good ones too I believe. He has also placed an order for a Berkshire boar. Probably will supply him from MacDonald College, the home of good stuff.

H. C. Jewett, Fredericton, is exhibiting his horses at the Houlton Fair. The Yanks will have to travel some to pull first money in some of the classes.

We were pleased to see Harding Bros. pull down first and second money in the aged bull class at Sherbrooke —it takes courage to go up country; not much though if you can produce the goods.

Breeders report lots of orders for stud sheep coning in—better order before all the good ones are gone.

Some day we hope to see New Brunswick the sheep centre of Canada—no reason why—a lot of work to do yet though.

From now on the wether lambs will gain like the mischief—unfortunately New Brunswcik farmers will not profit from the source—we haven't any, they are all rams. Wonder how long shiftless methods in flock management will persist.

The Hon. F. B. Carvell, Minister of Public Works, has ordered 24 breeding ewes and a pure-bred Shropshire ram.

Get a few sheep to try them out, if you have any fence suitable to hold them. They will help clean up the farm and feed on otherwise waste forage and make you a handsome profit.

If hogs are troubled with rheumatism in fattening or growing a little, nitrate of potash in their feed three times a day will be beneficial. About 3 grains per cwt. is the correct dose.

THE HORSE

TO PREVENT OVERHEATING, SUNSTROKE AND HOME SICKNESS AMONG HORSES

Let your sympathy for the horse find vent in considerate actions towards his comfort when the hot spell is on. August and September are the really trying months on horses, and the two months when horses of all ages and kinds need most attention. They get the week ends to rest, from Saturday till Monday morning, and a few odd idle days or a little occasional slack for a while and these are valuable opportunities wherein to brace up the horse for the strenuous rush of summer and fall work. Few farmers take any advantage of these off times to keep the horse in fit form or spirit for his duties. Too often this off time finds the horses turned loose on some old hoof trodden pasture to hug a fence corner or some poor shade tree and fight flies, that perhaps persistently bunch around an open sore on the shoulder. In all idle periods, during the heat, they should be turned out on fresh pastures at night, if possible, and stable them through the heat of the day with their usual attention to feeding and watering. This is the only way to conserve their energy for the coming fall work. Where there are sore shoulders they should get attention towards healing when in the barn all day, and free from the festering influence of the flies.

The Overheated Horse

Horses that are skilfully and watchfully cared for in summer, so as to keep them in best of health and vigor, can endure a degree of exertion in the hottest days that would strike down an ill-nourished, weakened animal. Grass is the natural feed of the horse, but nature meant it only for the idle horse. The domesticated animal has strenuous duties to perform and requires extra aids to keep up his energy. Without that energy the horse gets weak and is less able to get rid of surplus heat from exercise.

There are several signs that show up to the observant teamster, indicating when the horse is played out with the heat. There are some willing horses, that have ignorant and inhuman drivers, that work in heat till they fall out, either from exhaustion or sunstroke. These horses can be saved if the teamster is alive to the signs that foretell the coming collapse. These signs are the only methods whereby the dumb animal can inform the teamster of his condition.

When horses are working in hot weather and sweat suddenly stops, it is time to examine them. If the horse's hair is dry when expected to be wet and he is panting rapidly, or if he staggers when walking or braces the legs when standing, with general appearance of depression he has been pushed ahead too long. Before the animal gets worse off than that it is best to get him into the shade. A good home stimulant for such cases is two ounces of aromatic spirits of ammonia, or two ounces of sweet spirits of nitre in a pint of water. A pint of warm coffee is also recommended, but be sure it is not too hot, as horses are sensitive to heated foods.

The horses that are most liable to play out in heat are those that are overfat and have not had sufficient exercise, previous to steady work in hot weather, young and immature horses, feeble and ill-nourished and old horses. All these have to be carefully watched in heat while working. In an attack of sunstroke which overfat and also ill-nourished horses are liable to, it will be readily known by the horse suddenly stopping in his work, propping himself up on extended legs and panting violently. The cure adopted in the East by the Arabs, who understand the horse perhaps better than any race, when sunstroke signs appear, is to inject 30 to 60 grains of quinine underneath the skin by hypodermic syringe. No other plan equals this in efficacy.

A horse that has had a breakdown from overheating is never the same horse again, so that careful attention to the health of horses in hot weather, and watching for the first danger signals in the field is most essential. The greatest hustlers with farm operations, and those who get a surprising amount of work done by each horse without ever killing one by heat, are the men that are on the outlook for heat troubles and prepare and feed the horse to withstand them. An overheated horse is a poor piece of property, and the overheating can be avoided.

It is all a matter of sympathy with the horse on the part of the teamster. The horse has the same coat and covering to spend the heat hours of day as well as the colder hours of night. He cannot lay aside his coat on the hot working days and put it on when the colder spells come as does the human co-worker in the field. The harness of the day time also adds to the horse's discomfort from heating. Rigid attention to grooming the horse in the summer time alleviates the sweating and overehating, and the horse must be cooled down before being sent to grass and well groomed before starting the day's work.

The Homesick Horse

It is not generally suspected that kindness and sympathy with the horse in matters of detail that are considered of little value are stimulants towards a lively spirit and better health. They respond to different treatment in a manner that is not generally recognized.

The war has conscripted many of these faithful animals from the farm fields to the war fields of France and Mesopotamia, and the change has manifested this characteristic in the horse in a very visible manner. The recruited farm horse has to go through the same strenuous training as that of the fighting man, and this work has bred home sickness in the horse.

When a horse is homesick all the veterinarians in the world can do little for him. This ailment affects the horse equally as seriously as it does the man at the camp who is carrying a gun. Of all the classes of ailments met with among the horses at camp, that of home-sickness is the most difficult to handle. The men in charge of the horses, those who feed and look after them in the yards and barns, early detect symptoms of home-sickness. When they find a horse standing around by himself, moping and pining, with a vacant stare in his eye, and head hanging dejectedly, they take him at once to the observation ward and a "vet" is called who proceeds to give the animal a close physical examination, but he finds nothing wrong in the way of temperature, respiration or heart beat. In short, there is nothing in the world the matter with the horse that the "vet" can detect. But the soldier who brought the horse to the ward, as well as the "vet" is quick to decide as to what ails the horse.

The horse brought to the observation ward and found to be suffering from home-sickness improves slightly with careful attention and much petting by those in charge. It has been found that human sympathy goes much farther with horses so ailing than any other method that may be followed. It is turned back in the lot with tis former companions with the hope that it picks out a mate. Once a horse has mated up with another horse there is no danger of home- sickness. e eats and drinks regularly, and improves continually. In the event that the horse from the observation ward finds a mate among either his former companions, or some new arrivals, he at once begins to improve in physical condition, and within two weeks is ready for work in whatever capacity his size or individuality fits him. It is usually the horse that is purchased of an owner that gave splendid attention to his horse stock that is afflicted with the trouble mentioned. Where two or more horses from the same farm come to the camp, they are never troubled with home-sickness, as they chum contentedly together and thrive under hard work. It is usually the horse taken alone from a home that was peculiarly attractive to him that becomes homesick, and the greater pet he was at home the more severe his illness will be, unless he takes up with one of the men at the hospital and allows that individual to "baby him."

When nothing seems to relieve the condition of the home-sick horse, the animal grows progressively worse, and in due course of time is stricken with pneumonia.

The lesson is obvious. It is certain that if the conditions and surroundings of the horse are fitted to give him the greatest possible comfort while at strenuous work, he will respond with increased service.

HOW TO SHOE SHOW HORSES

The Results of 30 Years' Experience

Horseshoers and showmen disagree many times on the kind of shoes to use to show a big horse to the best advantage. My 30 years' experience as a fitter and shoer of all breeds of draft horses, besides several years spent in Scotland in the same work, have thoroughly convinced me that more horses have their action ruined by heavy shoes than are ever helped by them. One should vary the weight of the shoe with the size of the horse. A two-pound shoe is heavy enough for a yearling stallion, whereas I sometimes use as much as three pounds in a shoe for an aged horse. If a horse is a bad goer, a heavy shoe will freyuently make him worse. More can be done to perfect a horse's action by correcting as nearly as possible the shape and se of his feet than by loading him with heavy shoes. I always use medium weight shoes, particularly on young horses. One is much surer of getting true action with light shoes on a well-formed foot than he is to try to balance up an ill-saped foot by weight in the shoe. In most cases the well-shaped fot can be grown in time, and ordinarily a horse will go pretty nearly right if his feet have been properly taken care of since a foal. It is useless to expect that a horseshoer can put weight into a shoe so that it

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will serve the place of the properly turned foot. If the hoof isn't there on which to nail the shoe, it is impossible to balance the foot perfectly, because the weight will not come in the right place. That is why one sees so little uniformity in action as he looks at a string of draft horses at a show. Each horse has been equipped with a pair of shoes which it was thought would perfect his action. Nobody ever saw a good-going horsebare footed that didn't have the right kind of action when shod unless it wasn't done properly.

Differences in Front and Hind Feet

Shoes in front should be perfectly round, whereas those behind should be slightly oval shaped. There should be no toes either on the front shoes or the hind ones. The heels should be blunt and hammered down so that they are very low. A heel on a shoe has no particular value to a show horse except it may save him from slipping. The outer edge of the shoe should be made to fit the foot neatly, with the heel extending only a very little beyond the back edge on the front foot. The hind feet will stand more of a heel to the shoe than the front ones. In fact, I usually make the outside heel o nthe shoe for the hind feet quite a little longer than on the inside. That shaped shoe in the heel will help to throw a horse's hocks together. A similar shoe at the heel in frnot will, of course, help a horse t otoe out. It is particularly advantageous to shoe a horse so that his hocks will stay together a bit. It gives him a better stifle movement and makes him stouter to keep his heels together military fashion. Try yourself and see whether you can lift a heavier load with your feet standing apart or when your heels are close together and your toes out a bit. The same rule applies to the pulling power of a draft horse. The shoes should always be creased in the line of the nail holes, as that helps a horse to grip the ground. The toe clip should not be over an inch wide ond an inch and a quarter high. It should be hammered out very thin, so that if a horse pulls a shoe and steps on it the clip will bend over and not run into the foot. I have seen some bad cases develop from a horse stepping on a shoe with a big stiff clip on it. Furthermore, a wide clip doesn't look well, as it gives the appearance of too much metal on the feet. If I want to do a fancy job, I weld this clip on, but more frequently I turn it up from the shoe.

Important Feature Some Forget

A very important feature about a shoe which many blacksmiths forget is to have the inside edge next to the foot lower than the outside. Most shoes one sees are made higher on the inside than on the outside. The reason for having the ouside of the shoe higher is that the wieght of the animal should come to the wall and not on the sole of the foot. If the sole must bear the jars, the horse will soon go lame, and particularly when he has t ostand on a hard floor or be trotted on hard pavements. Frequently, if there isn't any toe to spare, I take a paring knife and removing just enough of the sole before puttting the shoe on, so that I am sure the shoe will not touch the sole. If a horse goes sor in front after he has been on the fair circuit for a while, it is likely due to his feet drying out, or else to a slight touch of founder from a draft. To pack clay in the bootom of the feet will help, but the best remedy I ever found was to stand the horse in a tub of hot water. Heat will take down inflammation and there is no other way of keeping the water so uniformly hot. To stand a horse in a tub of hot water several hours per day will usually remove the soreness in a short time. If the foot is contracting and causing inflammation inside the hoof walls, the hot water will soak up the hoofs faster than anything else. There should only be four nails on a aside, and they should be driven high up. The last nail toward the rear side of the foot should not be driven farther back than the quarter which is about the middle of the side from front to back. Both the hoes and the crease in the shoe should be set at an angle so that the nail can be driven parallel with the sloop of the hoof wall. Then, by punching the holes slightly to the inside of the centre of the shoe, the nails can be driven high up on the hoof with no danger of pricking. They hold better if nailed on this way. If set near the outer edge and at right angles to the shoe, it is impossible to drive nails high enough to hold well. If a shoe is nailed tightly in the heel, it will likely cause lameness. The reason is evident, for anyone knows that if a shoe is nailed on when the foot is dry and a horse goes out into the mud and soaks up his feet, the shoes are bound to draw very tightly because the foot has expanded with the moisture. Pressure for any length of time will cause inflammation of the sensitive tissues inside the foot wall.

How to Correct Faults in Gait

To shoe a draft horse to improve his gait requires a good deal of skill. One can shift the weight in a light horse and in that way alter his method of going considerably. No one cares whether a race horse goes square or not, if he has the speed. On the other hand, we require that a draft horse move true. The front foot should be picked up and set down straight ahead without any side motion one way or the other. Besides, the hind feet must be brought forward and set down in the same track made by the front ones. The appearance of the set of a foot can be changed wonderfully by shifting the clip a little one side or the other. That does not, however, improve the action at the trot. A paddler can only be helped by shortening the toe on the outside and growing it slightly longer on the inside. The shoe should not be nailed on exactly with the set of the foot, but should be shifted slightly with the toe a bit toward the inside. An attempt should be made to grow the foot so that it stands directly in line with the body, so that when the horse picks up his foot he will carry it forward in as nearly a straight line as possible.—By G. MacLeod, Illinois, in The Percheron Review.

HOW TO BREAK REARING HORSE

I have had considerable trouble with rearing horses and have found that they can usually be broken by the following method and especially if they are young and taken in time: Place a rope or strap surcingle around the body just back of the forelegs and fasten a pulley on either side of this. Take about 20 or 25 feet of ½-inch rope and run the ends through the pulleys. Fasten them around the front legs just below the pastern joints. Keep the loop end in your hand and when the horse is well up in the air, draw his feet up against his belly. When he comes down he will be forced to light on his knees. This is not advisable on a hard road as there is danger of injuring his legs, but a few lessons of this sort on the grass or in a plowed field will not soon be forgotten.

In feeding the colt bear in mind that it is bone and muscle that it needs, and the nitrogenous foods are what should be fed, such as oats and bran.

An ill-fitting collar is liken an ill-fitting shoe on the human foot. You wouldn't wear a shoe, would you, that caused corns, bunions and blisters? Be careful and humane.

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POULTRY.

WHY HENS START EATING THEIR EGGS

Egg-eating hens invariably are found in flocks under confinement, or in small pens. Hens given wide range seldom eat eggs for they are much too busy to contract the habit. Only while laying are they found about the nesting places. During the balance of the day they may be located here and there over the range given them, busily searching for food.

So when turning our attention to curbing this pernicious habit we must consider it from a standpoint of what the hen would do were she given freedom, for we must deal with the hen in confinement. Hens under confinement are those generally contracting vices, among these being egg-eating and feather-pulling. We keep our hens busy by throwing their grain in a deep litter of straw when they are in confinement. This keeps them busy. We like cracked corn, really better than whole corn, for it keeps them busy still longer. Cracked corn is not a better food than whole corn, but the point we wish to emphasize is that of keeping the hen busy. She works harder to satisfy her hunger. We have fed wet mashes, in the belief that it will satisfy their hunger more quickly, and we find it does, but then we have idle hens—the hens that begin to break and eat eggs. I have detected idle hens fighting others on the nests. These hens were not hungry.

Since we have fed protein, as the nature of hens calls for, we have had feed protein in the form of bran, beef scraps, tankage and buttermilk—not all at once, but use that most plentiful or most easily obtained. Here is where many people fail, even when hens have some range. If hens receive no proper amount of protein in their ration they will get a craving for animal food. If they do not get it any other way, they can get it by eating eggs, and they generally get it, too.

I wonder how many of our better halves are guilty of feeding egg shells without crushing them very fine? I have seen this done, and it is easy to comprehend how chickens may be led to eat eggs after being fed whole egg shells. We find it a good practice to slightly roast egg shells before feeding. They crumble nicely then.

As with many evils present in the various lines of farm life, prevention is easier than a cure, and when the habit once presents itself, it is impossible to completely eradicate it by preventive methods. Curative methods must be resorted to. We find that dark nests help much. If the hens can not see the eggs well it will be next to impossible for them to do much damage. Covered nests help much, as do also low nests. Keep hens from standing up in their nests and much of your trouble is conquered.

In cases of a badly depraved appetite for eggs, it is often necessary to catch and sell a few hens so that others may be kept from developing the habit. We have been compelled to do this and would advise others to do the same. Of course preventive measures should be taken at all times, but in extreme cases we advise eliminating the offenders from the flock.

WARNER E. FARVER.

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FENCED RANGES FOR THE POULTRY SAVE TROUBLE

On the farm it is often a problem to give the poultry sufficient range without having them run over the garden and the lawn around the house. At certain seasons they can have the run of the farm but at other times it is more satisfactory to have them under control. Fence costs money, but there will be more pleasure in producing poultry and eggs on the farm if certain areas are fenced off for the birds.

The enclosed area should be large enough to insure a supply of green feed throughout the growing season. If the green feed is just long enough to keep the hens picking at the tender shoots without being so long that it will become tough, it is just about right. Poultry enjoy ranging on a nice clover lawn. When the clover and the grasses in the poultry yard are just about like a nice lawn, the yard has a fine appearance and the birds are apt to thrive and be profitable.

The divided poultry range is very practical as this gives the poultryman an opportunity to keep the flock in one side of the yard while the grass is growing in the other. Certain crops can be raised on one side of the range and the birds excluded from that area except at stated times. We have one divided poultry range which can be described about as follows: It is large enough to keep an abundant supply of green feed for about three hundred fowls. Half of it, where the laying house is located consists of an apple orchard. A rich clover sod grows beneath the trees. We know that it pays to plow apple soil but this ground is constantly enriched by the birds and we apply sufficient mulch around the trees so that they do fairly well. This part of the range is abundantly furnished with shade. The other half consists of a clover field and a strawberry patch. The birds have the range of that section except at strawberry time. At other seasons they have not seemed to injure the plants. This combination gives the birds a satisfactory range and they do not attempt to fly over the fence. At present the birds confined on the range are Barred Rocks, and of course they fly less than Leghorns, but if any individuals show a tendency to come over, one wing is clipped and that prevents further escaping.

When a farm flock consisting of old and young birds is allowed to range together, the young are constantly trampled and crowded to one side at feeding time. They develop slowly and in a few years this will result in the entire flock becoming inferior. Of course the young birds are soon old birds and if they do not get a good start while young, the bad influence is soon apparent in all the birds of the flock and the breeding stock will be lacking in vigor and of poor laying ability.

There are two other advantages of the fenced range. The birds are not injured by other stock. If poultry flocks feed around horses, cattle, and hogs, some of them will receive broken legs and wings or other injuries by being kicked and stepped on by the animals. The loss of eggs from stock which has access to the barn and other buildings, is quite large. Some eggs are never found and others are gathered after becoming stale. If the hens are given a clean grassy range and no good place to lay eggs but in the poultry house, they will learn to lay in the proper nests and there will be scarcely any eggs lost. Of course hens on a fenced range can be given the unlimited range of the farm at certain seasons, but the means are at hand to control them quickly whenever it is necessary.

Poultry raising on the farm will bring a larger profit and be considered more seriously when there is more effort made to control the birds. At present they actually are a nuisance on some farms due to the fact that they roost on the farm impements, sun themselves on the verandah, scratch up the garden and keep the entire lawn around the house unfit for human enjoyment. By keeping them under control they are placed upon the same plane as the other live stock on the farm and their management gives much more satisfaction and profit.

R. G. KIRBY.

IN SELECTING BIRDS HOW TO ELIMINATE ALL NON-PRODUCERS

In the poultry yard every farm has its slackers as well as workers. On the average farm from twenty to forty per cent. of the flock should be culled and consigned to the meat market. Due to lack of system and knowledge most farmers have been marketing their best layers and retaining the "big, fine looking hens," along with those that have been "family pets" for the last five years. We need not labor under delusions any longer. There is too sharp a contrast between the high and low producing hen, for us to grope along blindly. Two methods of selection will be dealt with: (1) summer and fall selection; (2) the quality test.

By intelligent culling we mean the elimination of all slacker hens, without any reduction in the egg yield. It also means higher flock averages, lower grain and labor bills, and greater profits.

The comb is the health certificate of the hen. The shriveled, dry, scurvy looking comb of the low producer indicates lack of blood circulation and vitality, while a full bright waxy comb of the heavy producer means vitality and strong blood circulation.

In most cases a late moulting hen is the heaviest layer. She generally defers changing her feathers until the latter part of October or November and quickly moults in again. The opposite is true of the drones, they usually commence in July or August, moult very slolwy, taking from one month to six weeks longer than the producers, then wait until the warm spring weather before trying to perpetuate themselves by laying eggs.

The other method of selection by the "quality test" system can be applied at any season of the year with pronounced accuracy. It is not necessary to winter a large number of hens, to feed and care for them for six months and wait for the signs of production, mentioned in above test, to appear.

A Test for Egg Capacity.

Dealing with the pelvic region, which corresponds to the udder of a dairy cow, we look for the same characteristics in the egg sack of the hen that we do in the udder of a heavy milker, quality and capacity.

Capacity is generally measured by the width or number of fingers that can be placed perpendicular across the abdomen, between the breast and the pelvic bones. This distance varies greatly with different hens. The non-producer has only one or two finger capacity. The slacker, or non-profitable hen, may have from three to six finger capacity, the same as the heavy layer, but it lacks quality, and we measure quality by the flexibility and fineness of the egg sack. A hen with large capacity, but having a thick, fat, flabby egg sack, or an inflated egg sack, will not produce nearly so large a number of eggs that a hen of equal capacity having an egg sack that is thing, mellow and contractable. Therefore, we say the greater the capacity combined with contractability of the egg sack, the more eggs we can expect.

Capacity determines the length of cycle—quality determines the rythm when applied in conjunction with capacity. Both are necessary characteristics of a heavy layer. They indicate the possibilities of the individual mechanism within the hen. The actual efficiency in egg production will then rest with the person operating the machinery.—E. C. FOREMAN.

DISPOSE OF OLD HENS

As soon as the breeding season is over, get rid of all male birds used in the breeding pens. When the egg yield drops in the early summer, or when the egg yield does not pay for the feed, sell off all hens over two years old and even the year-olds cull pretty well. Poultry at this time of the year will bring a better price than later and feed and space will be saved for the best of the year-olds and the growing chicks. Old hens as a rule, especially of the heavier varieties, do not pay for their feed in late summer eggs.

Sell the young cockerels whenever they are ready throughout the summer. Don't keep everything till the fall. Whenever the price is good, sell the cockerels as broilers or as small roasters.

In an experiment carried on at the Experimental Farm in the spring of 1917 with Leghorn chickens, the sale of the cockerels paid all expenses for incubation, brooding and feed for themselves and pullets up until the first of September. When the pullets

went into winter quarters on November 1st, they had cost over and above what had been paid by the sale of the cockerels just 3.9 cents each. This experiment showed not only that it paid to sell the cockerels early, but it also demonstrated that pullets could be raised much cheaper than they could be bought in the fall.

BREAKING UP THE BROODY HEN

There are very few poultry breeders who have not had laughable and provoking experiences with broody hens, for these persistent hens are both amusing and annoying. About the only breeder who does not face the problem of breaking up the broody hen is the man who raises Leghorns, and sometimes these hens become very anxious to be mothers after they have passed two or three summers.

A poultry journal once offered prizes to the readers who would send the best methods of breaking the sitting hen. The editor of that paper must have had some hearty laughs at the plans proposed by his friends and readers, for over 1,500 of them sent in replies, some very amusing indeed. One breeder suggested tying a bright rd ribbon around the hen's neck, with teh bows extending far out at each side. He said the old hen was so busy looking at her tie and admiring herself that she forgot her nest. Another said he placed a roomy coop on a very steep hillside, and the hens could not sit comfortably, so they "took to" the perches he provided and roosted instead of sitting. In a few days they were clear out of the notion. Another said he tied a barrel under a tree, put a wire mesh door on each end of the barrel and put his hens inside. When they tried to cuddle down the barrel kept tilting up and down, as the thing was hung from one rope fastened in the middle of the barrel. Still another advised putting a chunk of ice in the nest, another a piece of slate roofing, and yet another suggested a Teddy Bear. Placing the broody hen in a pen with kittens or pet rabbits will also change her mind, so some one said.

MOULTING HENS

From the number of inquiries which Mr. D. O. Barto has received recently asking for information or directions concerning the proper treatment of hens to induce early and rapid moulting in order to secure an increased number of eggs in late fall and the winter months, it is evident that the idea prevails with many that this method of increasing winter egg production has been proven to be successful.

"However, this is not the fat," says Mr. Barto. "A very careful and thorough experiment to test this question was conducted a few years ago at Cornell University Poultry Experiment Station. The method that is used to produce rapid moulting is to starve the flock for about three weeks by cutting the ration to one-third the usual amount and then rapidly increasing the feed to all the birds can be induced to consume. This causes a rather sudden dropping of the old feathers, but the Cornell Experiment Station found that the hens thus treated produced fewer eggs during the fall and winter and at a greater cost per dozen than did the hens fed normally.

It is better to feed the fowls an abundance of nutritious food, quite rich in protein and fats during the moulting season, but not to attempt to force the moult by any patent stimulating foods.

THE TURKEY MOTHER

There is little use trying to keep turkey chicks on a limited range. They love to walk and also to roost in the open. The turkey hen is an ideal sitter, but a bad mother unless confined, as she drags her young after her, and does not wait for those that fall out by the way so long as one is left.

WASH DAY

Good Soap—
Plenty of hot water—
And a sunny, breezy day !

All are essentials on wash day. But there is a something else thta must not be lacking—a strong back. Advertisers of machinery may write glibly of their labour-less devices, and the editors of home journals may soothingly describe the pleasures of the laundry under modern conditions; but clean, snowy white clothes are always paid for at the price of hard work. In the days when every woman did her own washing, and did it better than it is done to-day by modern laundries, Dr. Chase devoted his talent and experience to keeping women fit for household work. They were the every day physical problems of the Average Man and the Average Woman that interested him. Remember please that is the secret of his success. That is the real reason why his name lives to-day, and will live for the future.

He reasoned in the days of our grandmothers that in order to keep the human machine in good working order, attention must be given to the condition of the filtering and excretory system. And his reasoning rings true in the year of Our Lord 1918. Wherever there is physical work to be done there is need of regulating human machinery by the Dr. Chase Plan of Health.

From his every day experience in the practice of medicine, and as a result of dealing with a wide variety of cases, the doctor realized that the foundation of his Plan of Health must consist of a treatment to regulate the liver, kidneys and bowels.

Everywhere he found people complaining of backache, of rheumatism, of lumbago, of pains in the limbs and of headaches. The woman at the tub as well as the man with the hoe was suffering the results of a poisoned system.

The kidneys failed to filter these poisons from the blood—the liver was torpid—the bowels constipated. To meet this condition Dr. Chase worked out the treatment now so well known as Dr. Chase's Kidney-Liver Pills.

This treatment was long tested in private practice before it was given to the public. Time has proven that the old doctor was thorough in his work, for there are many thousands of people ready to certify that there never was a real rival to this standard medicine.

If more people realized the effectiveness of this treatment, there would be fewer operations for appendicitis, peritonitis, gall stones and other deadly ills, which are certainly caused by neglect to keep the filtering and excretory systems in healthful condition.

Let the Dr. Chase Plan of Health be your guide and you will add years of health and comfort to your life. If you are not familiar with Dr. Chase's Kidney-Liver Pills, just mention the Maritime Farmer and we shall send you a sample box free of charge. One pill a dose, 25 cts. a box, at all dealers, or Edmanson, Bates & Co. Limited, Toronto.

DETECTING CHOICE LAYERS

My wife called my attention one day to the pelvic bone test for detecting choice layers. She had forgotten just where she received the information, but thinks that it was probably in one of the farm papers. I have followed the test carefully since, and I am greatly convinced of its importance. I am giving it here because I believe all keepers of chickens should know the test.

To apply the test measure the width between the horns of the pelvic bones with the fingers. If three fingers will lie easily between the horns the hen is in all likelihood a choice layer; if two fingers lie between the horns the hen may be a fair layer, but is assuredly not the best; if only one finger can be inserted between the horns the hen is a very poor layer, and should be culled from the flock.—E. V. L.

FOR GROWING DUCKLINGS

Growing ducklings thrive best on a feed composed of equal parts, by measure, of corn meal, ground peas, bran and middlings, all made into a thick mash, either with scalding hot water or milk, the latter being the best. The mash is improved by adding short-cut green stuff, and a few handfuls of coarse sand.

Timothy hay is not particularly high in feeding value but the fact that it can be fed with little waste and that practically all classes of live stock eat it readily makes it a general favorite on the market. It usually contains about 6 per cent. protein, 45 per cent. carbohydrates, 2.5 per cent. fat and 29 per cent. crude fibre.

FOR HOME AND COUNTRY

This Department will be utilized to the best interests of the homes in the Maritime Provinces. Subjects relating to household science and all that stands for better homes and communities will be published on this page. The editor, Mrs. M. A. MacLeod, Sussex, N. B., solicits your assistance in making this page a success and will be glad to publish tested recipes, household discoveries and other articles useful to the homemaker and women's or-ganizations.

THE TORCH

By Fanny Lea

"I don't think," said Mrs. Pennington slowly and with a controlled movement of dry, unwilling lips, "that you quite understand me."

Her husband looked back at her from across the hearth grimly, not caring to conceal his incredulous displeasure.

"I don't think," he assented chillingly, "that I do."

He folded the newspaper he had been reading and laid it down upon the library table with the unconscious method that was part of the man, then put cool finger tips together and inspected his wife deliberately through gold-rimmed eye-glasses, as if she had been some new and undesirable kind of visitor.

"What," he asked finally, "are you talking about? Do you know, yourself?"

"Quite well," Mrs. Pennington answered without resentment. "I know quite well what I am talking about. Do you want me to say it all again? Is that necessary?"

Her tired blue eyes, faded somewhat grayly from their first clearness, yet gave back his look with an undaunted purpose, and the soft, indecisive mouth set itself in sterner lines. In the lap of her quiet, neutral-colored gown, her little roughened hands folded themselves tightly, asking strength from each other.

"Shall I tell you again?" she insisted with a kind of gentle stubbornness.

Mr. Pennington's answer was the exaggeration of courtesy. "If you will be so good."

Mrs. Pennington drew a long breath and her muscles grew tense. "I want to go away," she said doggedly; "that is all there is to it. I want to go away."

"You mean, I suppose, a visit to some of your people."

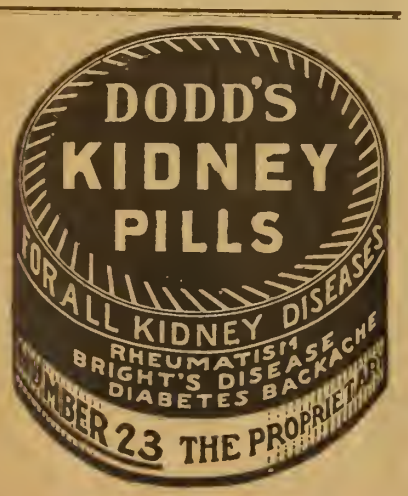
She shook her head, setting her teeth on her lips' unsteady treachery.

"I want to leave you—you know what I mean."

"I do not," Mr. Pennington denied with some irritation. "I have not the remotest idea, Louisa—and that phrase has a very unpleasant significance. Please do not use it again. It is generally associated wtih scandals and the divorce court."

"But that is what I mean," Mrs. Pennington persisted. "I want a separation."

She did not lift her eyes from the cheerful fire in the grate until the burden of silence frightened her and set little frightened pulses twitching in throat and brow.



"That is what I mean," she repeated bravely, and looked across into her husband's startled face.

He sat aghast, regarding her, speechless, chill eyes lit with a flame of incredulity, thin mouth weakening to an unuttered exclamation. While their glances crossed, a dull, angry red rose to his brow and suffused the roots of his scant, dark hair.

Twice he opened his mouth, and snapped it shut, with a futility of expression that woke a mad desire for laughter in the woman before him, evolving inadequate speech at last in a voice keyed curiously higher than his wont.

"Well," he jerked out baldly, "upon my word!"

Mrs. Pennington waited in silence for a more definite answer. She did not look like a woman to fight her way out of the rut, but her eyes were very steady, and they did not fall before the man's dazed, furious look.

He pulled himself together presently with an obvious effort, stiffening his face to its accustomed, controlled mask, and settling his glasses with a hand that shook slightly.

"So you want a—a separation?" he observed, failing a little in his endeavor of toneless detachment. There was amazement and a throbbing anger in his voice.

"You have a reason, I suppose, for this remarkable statement?"

"Yes," she said quietly, "yes—I have a great many reasons, Mr. Pennington."

"I should like," he demanded, "to hear one of them—one of these amazing reasons of yours—that would justify such an appalling step."

In the firelight, that showed pitifully plain the little lines about her eyes and the deep,strained furrows on either side of her mouth, Mrs. Pennington essayed to smile.

"If you will only not look at it in that way," she said with an incongruous gentleness. "I have no wish to affront you or hurt you. This is not a crazy impulse on my part; it is an old determination. There are a great many things that—that are concerned in it."

"A great many— Oh talk sense!" said Mr. Pennington brusquely. "I should like to get to the bottom of this, if you please." He beat an intolerant tattoo with the knuckles of one hand upon the palm of the other.

"You would have a long way to go," answered his wife slowly, "but I think I can tell you—if you will let me. There is no reason, is there, why we shouldn't talk it over impartially?"

Mr. Pennington leaned back in his chair, gripping the arms of it with wiry, nervous hands. He stared gloomily into the fire with unbelieving eyes.

"Go on," he commanded, "for God's sake! After twenty years—this melodrama!"

The woman's clasped hands tightened breathlessly, every muscle of her body rallying to the strain she had set upon herself.

"This melodrama, as you choose to call it"—she struck the first note of resentment—"is nothing new. Only, you haven't seen it before. It had a beginning seventeen years ago. You remember Dorothy's first birthday?"

"I remember nothing."

"Then I can tell you. The night of Dorothy's first birthday—we had been married three years—we quarrelled—do you remember now?"

She waited a moment, but he did not answer.

"I don't mean that the quarrel was everything. It was only the—the culmination. It was a small thing, perhaps, but it came after a great many other small things—"

She fumbled a moment carefully for words, her inner consciousness a pitiful blur of struggling days and anguished nights. "It came after a great many other small things," she repeated, as if to gain time, groping her way cautiously.

"It is incredible," Mr. Pennington began angrily yet with a sort of dazed endeavor to follow. She interrupted him swiftly.

"If I were a witness, you'd let me tell what I knew. You can listen to other evidence—why not to mine? It's not easy for me to explain—" She broke off to begin again more calmly.

"I was very young, you know, when you married me, and very sensitive. I didn't know then a great many things that I have learned since. I thought the world was just what it looked like always, and what the poets and musicians and painters had made it out to be. I had been kept carefully all my life inside a fence, where horrible things and wicked things"—she flung out the next phrase desperately—"and true things—were not allowed to come. All I knew of life I had gotten from silly novels and poems where the wedding bells are the end of the story, and marriage is never for anything else but love. Perhaps that made me stupid and slow to understand, but you were not too patient with me. It used to seem sometimes as if you didn't care, having once gotten me for your wife, whether you kept my—my love—or not. I was just a fact in your life, like the breakfast table or the evening paper. You didn't have to win me; I was there—just a matter of course, like everything else in the house—fires and meals and furniture."

Mr. Pennington moved and frowned irritably.

"This is the sheerest sentimentality," he said. "I asked for a reason."

"I am trying to show you," she defended, not yielding an inch, though a slow, painful flush belied her control. "Can't you see what a difference there was in everything to me? I had been poetic and idealistic and—foolish. Life meant a thing to be softened and made beautiful and uplifted. When you said—when you asked me to marry you, I cried half the night for happiness, and I prayed—prayed, mind you—beside my bed, with my face hidden, that I might make myself what you believed and wanted me to be. Well, I have been a good housekeeper—I suppose my prayer was answered."

She hurried on before his impatient protest.

"What I mean is that I married you, expecting things that never happened. And others that did happen I had not dreamed of. Most people are like that, I suppose; but when they love each other it's worth while—they can stand the mistakes and the clashes. You didn't care for me—after you married me—enough to smooth things over. And you were always clever; there was nothing too bitter for you to say to me when I failed to meet your requirements."

"You spoke of a quarrel," said Mr. Pennington coldly. "This other, I imagine, is every man's and every woman's experience. A woman can always see a tragedy in the commonplace, so long as it concerns herself."

His wife did not look at him. She waited a moment, seeing in a dim, visioned space those earlier days of sordid disillusion—her hopeless wrestling for adjustment of Life and the Dream.

"I don't know," she said at last quietly, "whether you will see any better when I remind you of the quarrel. I told you it was nothing of consequence to you. We had been talking of something you wished me to do—there was a business man in town who could be of use to you, and you wanted me to call on his wife. I was timid, foolishly, of course, and I didn't want to go. Do you remember the discussion?"

"Not in the least," he denied grimly. "I must say it all seems very absurd to me. I may be prejudiced."

"You said," she prompted carefully, "that you had expected me to be a help, not a hindrance. You were very angry about it. You said that you were sick of my childishness—that you had stood a great deal of it—and that, apparently, I realized no obligation whatsoever. You asked me at last, after a great many other unkind things, what I supposed you had married me for."

She stopped with a little breathless catch in her voice, then went on again, always quietly, even with a sort of detached exactness.

"I said for love, I supposed—and you laughed. That was very nearly unpardonable. Then you lighted a cigar, I remember quite distinctly, and as you threw the match away you said"—she quoted clearly—"'Don't be absurd! You talk like a schoolgirl. There are bigger things in the world than sentiment. Of course, a man's affection for his wife is always a consideration, but in sheer justice there are certain other things she owes him in return for his name and support: the care of his home, and so on. That's common sense. All love is material—to be ab-

HAD SEVERE PAINS IN SIDES AND BACK.

HAD TO GO TO BED.

Women are the greatest sufferers from weak, lame and aching backs owing to the continual stooping, bending and lifting so necessary to perform their household duties.

Women should not despair even if they are troubled with severe pains in the side or back, and not able to attend to these duties, as all they need to do to make the back strong and well again is to stimulate the kidneys with Doan's Kidney Pills.

Mrs. John Simmons, Coleman, P.E.I., writes: "I feel it my duty to recommend Doan's Kidney Pills to any one having weak kidneys, as they have been of great help to me.

Some time ago my kidneys were so bad I had severe pains in my sides and back, and it was impossible for me to stand straight. I then got so bad I had to go to bed, and was that way for a week. I sent for some Doan's Kidney Pills, and I took just about one box, and was able to get up and do my own work."

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solutely frank about it. Marriage involves so much for so much. You ought to have sense enough to know that—' "

He would have interrupted now, but she silenced him with one out-thrust hand. Memory came back to him slowly. She saw it in his changing face—at the sound of those unlovely words drawn up before him, the ghosts of a long dead anger.

"Oh, I know you were infuriated. You said more than you meant to, perhaps. I had irritated you. But even so, no circumstances under heaven—Can't you see? Can't you? Can't you see it was like the end of everything for me? You had taken everything I had to give, and you considered that you were paying for it with your name and support! You degraded me—unspeakably. But it made things plain to me—the horrible mistake I had made. I couldn't love you after that. You had better have struck me in the face."

"Absurd!" he muttered.

"Not so very absurd, after all," said little Mrs. Pennington gently. "A girl who isn't very old and hasn't had very many lovers is easily mistaken, I suppose. There are so many things that look like love—how is she to know, until her hands are tied? But once she knows the mistake, she can never go back."

She hurried a little before the impotent scorn of his look. "It had seemed a very fine thing to be loved, to be engaged. I was proud of you, and of your good looks—and your success. I was proud of myself because you wanted me. I was not so proud when I learned the truth. It was not me that you wanted—especially, only a wife. It happened that I came in your way just then.

"Anyhow"—she stumbled, losing her control a little before the cold reproach of his eyes—"I made a mistake. I should never have known it if you hadn't shown me. I wanted to go back to my mother, then, but Dorothy cried in the next room, and she was only a baby—my baby—so I stayed. I couldn't leave her, and I knew you wouldn't let me take her away. I didn't say anything more to you, but that night, after I had cried myself still, I made myself a promise—that I would leave you as soon as Dorothy should be old enough not to need me. I saved my self-respect that way."

She stopped, twisting a handkerchief drawn from her belt between chill, nervous fingers.

"Dorothy was eighteen last week—and I am not going to wait any longer. I have waited seventeen years already; that is quite a long time, you see."

"I see," said Mr. Pennington drily, when she had done. "You have endured your married life for twenty years, and at this late date it becomes intolerable to you. That is very strange."

"Not strange at all," she insisted, pitifully firm. "You don't seem to understand. I have endured it because I meant to free myself in the end. I did it for Dorothy—can't you see? She has never known that there was anything wrong. A child has to have its ideals to begin on, and Dorothy has had hers intact—I've seen to that. She hasn't guessed that there was ever anything wrong. She doesn't know that there is not the most perfect sympathy between us. A child is at such a horrible disadvantage when its parents are—when they do not agree. I have saved her that."

She strained her clenched fingers against each other, and looked at him almost pleadingly.

"I am not hating you for it," she explained hopelessly. "I am not even reproaching you. But don't you think when I tell you that I have waited seventeen years for Dorothy's sake—that for seventeen years I have wanted to be free—don't you think you might let me go—quietly?"

Her hushed, earnest voice sounded distinctly through the still warm room, above the little homelike noises of dropping coals and the clock ticking on the mantel.

"I do not suppose," said Mr. Pennington carefully, "that any man was ever forced to listen to such a diatribe before."

"There are a great many things," Mrs. Pennington replied with a wistful, unconscious humor, "that men are not forced to listen to—when they

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should be. I'm sorry."

"Sorry!" he retorted contemptuously. "I am amazed—absolutely amazed! After all this time—do you expect me to believe that you have had this thing in your mind for seventeen years?"

"I have just told you so."

"Seventeen years, in which you have kept my house, brought up my child and borne my name—without a protest."

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"The laborer," Mrs. Pennington defended, "is worthy of his hire. I have earned my keep, I think."

"That is not," said Mr. Pennington disgustedly, "a very refined nor edifying way of expressing it."

Mrs. Pennington smiled with difficulty, and a little wryly. "You are inconsistent," she objected softly. "It is not, to my mind, a very refined or edifying thing to express, but you taught it to me yourself."

They looked at each other a moment in silence, measuring swords, as it almost seemed, and the man's look wavered first. He shifted in his chair and turned eyes of concentrated bitterness upon the flame.

"You did not expect the moonshine to outlast the first twelve-month?" he offered, something in his tone and look nearing a compromise. "I thought you had better sense. Marriage is a sensible, ordinary institution for everyday people—not a romance."

"I know what marriage is now," she said very quietly.

"I have not stinted you in money, clothes, things about the house."

"You have paid your bills," she agreed. "They were not overdrawn."

He faced her suddenly, his mouth working, his control sapped by her dogged resistance.

"You have seemed to be satisfied," he broke out huskily. "You have not objected to me and my ways. We have lived very peaceably together—"

"Because you have had your will in everything."

"Whatever the reason, we have lived peaceably. In heaven's name, what possesses you now? You have kept quiet all these years—"

"That was for Dorothy," she reiterated, steadfastly returning his look.

Presently he got to his feet and paced the floor, lashed by a resistless realization of the will beneath her gentle surface. She sat still, looking into the fire and waiting.

"You have no right to ask this thing," he said at last, halting beside the table. "I suppose you know that."

"Then I shall not ask it," she replied stubbornly. "I shall simply tell you what I am going to do."

He took up his restless stride again, flinging over his shoulder a barbed shaft that struck and quivered in the wound is made.

"What about Dorothy now?"

Dorothy's mother went white after a very ghastly fashion, drawing the back of her hand across eyes that strove to see clearly.

"It is selfish of me," she said after a little—"do you thing I don't know?—horribly selfish. You can tell me nothing like that that I have not seen. I do not for a moment defend myself"—the slow voice trembled—"but I cannot change. I have a right to something out of my life, and I am going to have it. Dorothy is a woman now. And she need not learn the truth all at once. I can go away, and she must gradually realize that I am not coming back. When she was born I was no older than Dorothy is today. She is old enough to understand. I have not been selfish all my life, but all my life I have been unhappy. Now, I am going to try the other way. I know what I am doing. You cannot stop me."

"It makes no difference, I suppose, that you will be giving her name to the public for a football?"

"Hardly that," said Mrs. Pennington with a tired little movement of one hand. "It isn't uncommon nowadays for women to leave their husbands. I'm afraid I can't change. You see, I have been waiting such a long time."

Mr. Pennington came back to the fireplace and stood there, frowning coldly.

"If I could see your point of view," he began, "I might hope to understand you. As it is, I can make nothing out of your explanation beyond the fact that seventeen years ago, by way of an absurd and trivial dispute, you found that you did not—er—care for me, and, as a result, you wish to leave me now. Why, I cannot see. I do not ask any youthful absurdities in the

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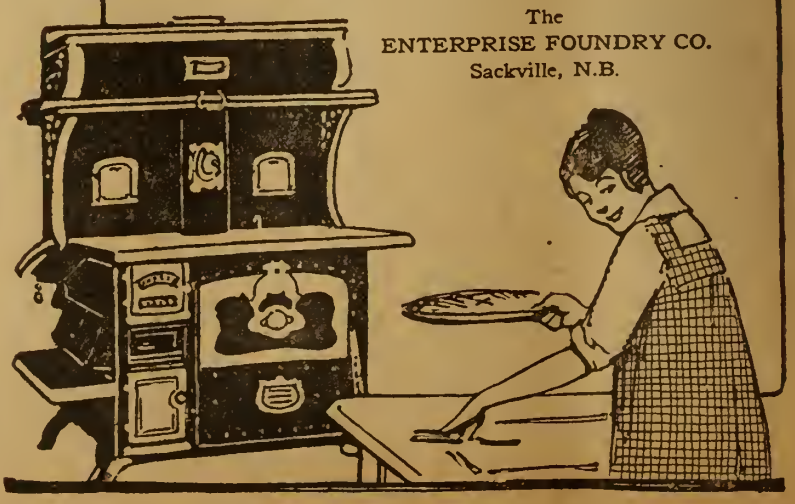

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matter of emotion. A calm, unexacting affection is all that is expected of people of your age and mine. As I said before, we are past the time of moonshine, my dear"—he frowned, because she winced at that—"and, to the best of my knowledge, in these last seventeen years which figure so conspicuously in your remarks, we have been very comfortable."

Mr. Pennington ceased. He had once been referred to as the coolest, most level-headed lawyer in his town, and he was apt in didactic movements to be sustained by the remembrance. He was therefore the more startled and discomfited by the flame that lighted his wife's face beneath his eyes of scorn, and white, despairing rage.

She slipped to her feet and stood by the table, one hand on its green-covered surface, the other at her trembling throat.

"Comfortable!" she cried almost in a whisper. "Comfortable!"

He stirred uneasily beneath the flick of her contempt.

"Yo uthink it is comfortable to find out at nineteen that you have married a man who does not love you—and live with him till you are thirty-six? I was sixteen when I married you—a child, that's all, just a child. And you have had all the best part of my life. What have I had? Nothing. What am I going to have? Myself. I'm not an old woman yet. I can go away and have a little house somewhere and work and sleep and rest—by myself. There are hundreds of books I have never read, and there's music I've never heard—I shan't be lonely. And I can be honest. I'm so tired of pretending. I've been pretending for seventeen years."

It seemed incredible, in the accustomed quiet of the room, among all the familiar objects, with the paraphernalia of every day about her, that the little white-faced woman could change so suddenly and so vitally to a creature of flaming purpose. She would not even let him speak.

"I don't know," she said unevenly, "why girls aren't told the truth about things. My mother would have given her life for me—but she let me marry you, thinking love was the reason of everything. I had a world of pretty ideals—bubbles, that's all—and she never explained to me that I couldn't keep them. That's why it hurt so to have them broken. Isn't it strange—this thing of a girl's ideals? They're like a torch, the mother keeps burning for the daughter—the mother, who no longer herself believes in them. The torch is handed down from generation to generation—and in sptie of it all the truth is always there, the truth that has got to be learned. If only they didn't teach us to expect so much, the disappointment would be easier."

She caught her breath sharply. "Anyhow, I can't pretend any longer—I'm too tired. I promised myself I'd be free—and I will. You mean nothing to me—less than nothing; and the whole world is welcome to know it!"

Her voice rose a little, shrilling above its soft, slow pitch, through unsteady lips that could not now control it.

"Hush!" said Mr. Pennington uneasily. He laid a hand on her arm, but she shook it off at once. "You are not yourself; you are hysterical."

"Is it any wonder?" She held herself fiercely quiet with the clasping hand at her throat, steadying herself against the table. "There are times when I have felt as if I should scream it out to the people in the street—as if I didn't know the man whom I had married at all—as if I had waked up some morning to find myself owned, body and soul, in the house of a stranger—"

"Sh-h!" said Mr. Pennington again. A look of nervous concern displaced the impassivity of his features. He drew a breath, almost of relief at this simplfying of the situation. Feminine hysterics he could at least recognize and categorize.

"Don't you think you'd better go to bed? You're all unstrung. I dare say you're run down, and your nerves are bad. You'll think better of this in the morning. I'll get Barton to give you a tonic. We won't talk any more tonight."

Mrs. Pennington controlled herself with a wrenching effect and turned away.

"You're right," she said wearily; "we won't talk any more tonight. I don't think I could stand it. But will you please think over what I've said I'm not hysterical; I mean it."

"You'll change your mind," said Pennington soothingly. He followed her to the door, humoring her with a magnanimous appreciation of his own handling of the situation.

"You're nervous now and upset. I reproach myself for not having seen before that you were not well. I may have lost my temper and irritated you—but this is all a mistake. You'll change your mind."

"No," said Mrs. Pennington slowly, "I thnik not." She looked at him, and was disheartened by the uncomprehending indulgence in his face.

"It's no use," she murmured. "Please don't come any farther. Good night."

When she had gone a bare step or two away she turned back again, her look incredulous.

"You can't possibly mean that you would want me to stay after what I have told you?"

"I know that you are not well," he answered exasively, "and I make allowance for your nerves. We often say things in the heat of the moment—"

"So that is the way you prefer to put it!" She shook her head, her tired eyes giving him the lie direct. "In the heat of the moment one might, perhaps; not in the heat of seventeen years!"

From the landing of the stairway she looked down at him. He stood in the door, head bent, one nervous hand fumbling with his glasses, and while she watched he turned and went back into the library. She heard his chair drawn slowly to the hearth and the scrape of a lighting match.

Mrs. Pennington went on up the stairs and into her room at the end of the upper hall. There was a sudden and satisfying sense of achievement at her heart, although her hands were cold and her limbs quivered with the last surges of the emotion which had overswept her. While she undressed and let down the braids of her heavy, straight brown hair, her mnid brooded over its new freedom with an access of exultation. After seventeen years she had spoken the truth; and tomorrow she would go away, possessing herself again. She had been strong to wait, and she would be strong in the fulfillment of her desire. Only to be alone, to be free, to be herself—that was little to ask of life. And there was no one who would be harmed by what she did. Her freedom would react on no one's happiness. The man she called her husband had grown used to her presence in his house. He would as easily grow used to her absence. She owed him nothing—nothing but what she had paid—much unhappiness she had not paid. Dorothy—she would not think of Dorothy—she dared not. She swept the straight darkness of her hair down on either side of her face and brushed it lingeringly before the mirror. Her eyes looked back at her, clear but a little faded—they had been blue as gentians once. Above the straight prim collor of her brown flannel dressing gown her neck showed overly slender, with betraying cords. Those lines about her mouth told the story of hot words bitten back, and a tired need for laughter. A rush of stinging tears misted her sight, for sheer pity of the eager girl's face that no longer looked back to her from the mirror.

She had asked so much of life, that girl, and she had had so little.

Out of the half-twilight behind her in the glass, a slim, small figure took gradual shape and blossomed. Wide blue eyes under a soft sweep of hair and a low white brow, a mouth that curved to a confident sweetness, cheeks carnationed, even in the shadow—Mrs. Pennington stared back at the girl face dumbly, drawing her hand across her eyes, her lips tremulous. It was the face her mirror used to yield her, but while she looked it rippled to a smile, and with a sweep of white silken skirts Dorothy crossed the room and stood behind her mother's chair.

"What are you looking at, darling?" she teased, linking bare white arms about her mother's neck. "Did you think I was a ghost?"

Mrs. Pennington shook her head. "You startled me," she said quietly, "only for a moment. Aren't you late coming up, Dolly? Has Mr. Hazelhurst just gone?"

"Only just," Dorothy answered with a quick little movement of embarrassment. "Let me brush your hair, mother—do. Give me the brush."

She bent her head above the brown, soft strands. "You have such pretty hair. It's much longer than mine—mother, dear."

"Yes?" said Mrs. Pennington abstractedly. She leaned back in her chair, relaxing wearily to the soft, regular sweep of the brush.

"When you were—that is—when you and father were first engaged," said Dorothy slyly after a little, "how old were you?"

"Sixteen. I was almost seventeen when we were married," her mother answered perfunctorily. Then some sympathetic current arrested her sharply. "Why?"

"Nothing." Dorothy protested. "Oh, nothing! He had only a small salary, hadn't he? I've heard him say so."

The face above the swiftly moving hands flamed radiantly crimson, and the blue eyes shone through a happy mist.

(To be continued)

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A SALAD HINT

Sprinkle a little sugar or a little salt over apples which are to be used in salad, and they will remain white instead of turning brown. In this way the salad may be mixed some time beofre it is to be used.

I KNOW A WOMAN'S SUFFERINGS

I am a woman.
What I have suffered is a far better guide than any MAN'S experience gained second-hand.
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And the treatment that gave me health and strength, new interest in life, I want to pass on to you, that you, too, may enjoy the priceless boon of health.
Are you unhappy, unfit for your duties? Write and tell me how you feel and I will send you ten days' FREE trial of a home treatment to meet your individual needs, together with references to women in Canada who have passed through your troubles and regained health; or you can secure this FREE treatment for your daughter, sister or mother.
If you suffer from pain in the head, back, or bowels, feeling of weight aud dragging down sensations, falling or displacement of internal organs, bladder irritation with frequent urination, obstinate constipation or piles, pain in the sides regularly or irregularly, bloating, dyspepsia, extreme nervousness, depressed spirits, melancholy, desire to cry, fear of something evil about to happen, creeping feeling up the spine, palpitation, hot flashes, weariness, sallow complexion, with dark circles under the eyes, pain in the left breast or a general feeling that life is not worth living, I invite you to send to-day for my complete ten days' treatment entirely free and postpaid, to prove to yourself that these ailments can be easily and surely overcome at your own home, without the expense of hospital treatment, or the dangers of an operation. Women everywhere are escaping the surgeon's knife by knowing of my simple method of home treatment, and when you have been benefited, my sister, I shall only ask you to pass the good word along to some other sufferer. My home treatment is for all,—young or old.

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MRS. M. SUMMERS, Box 309 Windsor, Ontario

THE CHILD WHO CONTRADICTS

"I have a little girl just past seven, who is very bad about talking back and being contradictory. I have tried to break her of the habit, but she seems to be growing worse instead of better, and she is usually cranky, gets up that way in the morning, and comlains and growls all day, especially when things don't go just as she wants them to."

There must be something wrong with either the nutrition or the sleeping of your seven-year-old daughter if she is "cranky" most of the time, and gets up in the morning complaining and growling. Seven-year-old children who are in vigorous health do not behave in this way. Do Dyou know whether she is in good physical condition? Does she sleep soundly? Does she have adenoids which stop up breathing passages and interfere with her sleeping and with her breathing while she is awake? Does she have enlarged tonsils? Are her teeth sound Are there some teeth that are not yet cut, and so may be pressing upon nerves and making her irritable and "cranky"? If she has always been inclined to complain and growl, you cannot lay the cause to the teeth, but adenoids or enlarged tonsils might be the cause.

Does she eat a good deal of sugar, or candy, or honey? I presume you do not give her any tea or coffee or much cocoa. If you do, this may explain her irritability. Does she like fruit? Is she notional about her eating, or will she eat the usual articles of food with a good appetite? Does she have some food with bran in it, either in the form of bread or cereals? Most children need a little rough food every day. I suppose you do not give her much meat. Meat makes most children irritable. Does she eliminate thoroughly This is absolutely necessary in order to avoid irritability.

If the child is well physically, and sleeps restfully, and still complains constantly, perahps it is because she is nagged a good deal. If the moment she gets up in the morning somebody begins complaining about her conduct, then aturally she will react in the same way. You say she "talks back and contradicts.' This suggests that you command her a good deal and argue with her. It is not unusual for children who are bossed constantly to talk back. Most childrei of the age of seven years do not give in readily to a parent or anyone else wha nags them. If you will watch yourself you will probably discover thav yoh do not give in readily. You contradict your child though you are not apt to think of it in this way.

The best way to deal with talking back and contradicting is not to give the child an occasion to do it. Par ents generally argue too much with their children, and incite them to be contradictory. The less arguing the better with any child. If certain things must be done, get them done without talking. It would be well if you would watch yourself ti see whether you do not unconsciously arouse your child to take the defensive. Many parents like to have their own way and can not stand it if a child asserts his individuality.

HAYING SEASON

Some town folks think that labor-saving devices have driven hard work from the farm. But, while the hay loader and the hay unloader, the self-binder and the separator, and all the machines of modern farm life have lightened toil, there is still enough of it left—and more than enough for most farmers.

Farming has its attractions, but at its best, it is a well man's job.

Away back in the sixties, in the strenuous days when this country was in the making, when scythes and sickles were still in use, Dr. Chase devoted himself to keeping men and women strong, to rendering them capable of performing a long day's work with the least possible fatigue. And therein lies the secret of the PERMANENCY of his success. Fifty years have gone, a half century crowded with innovations, and through all this time Dr. Chase's Remedies have retained their usefulness.

The mechanical engineer and the skilled physician have each in their way contributed to the happiness of mankind; one by reducing labor, and the other by keeping mankind fit for labor. Unfortunately the labor-saving devices of the engineer are not within every hay maker's reach. All mows are not equipped with horse-lifted forks or slings, and if they were, strong backs and steady, untiring arms would still be required in meadow and mow. In these strenuous days when men and women are called upon to do an unusual amount of work, when many—especially women—are obliged to do unusual work, there is a greater need than ever before of making provision for health.

Hard work effects the breaking down of myriads of cells in the human body. These cells when broken down, become so much ash—so much waste matter—which left in the blood poison the system. It is this poisonous waste matter in the blood which makes you feel completely tired out after a hard day's work.

The kidneys were designed by nature to filter these poisons from the blood and they must be kept healthy and in good working order. This is just where Dr. Chase's Kidney-Liver Pills befriend every man and every woman with hard work to do.

You can't pitch hay or do other heavy farm work with a lame, weak, aching back, and the quickest way to get the back right is by regulating the kidneys with Dr. Chase's Kidney-Liver Pills. You can buy them at any place where medicines are sold at 25c a box or by mail from Edmanson, Bates & Co., Ltd., Toronto. Why not let the Dr. Chase Plan of Health help you through the hard work this season?

Dr. Chase's Kidney-Liver Pills, one pill a dose, 25c. a box at all dealers or Edmanson, Bates & Co., Ltd., Toronto

SIMPLE RULES FOR THE USE OF FATS

The appeal of the Food Board to reduce the use of fats, and especially to limit butter to free use on the table rather than in cookery, is important.

To meet the needs of the country and do our part in the Home Army in the kitchen, these definite rules in regard to the use of fat will be helpful.

Breads:—Fats may be omitted entirely if desired.

Use clarified pork or beef fat, hardened vegetable fats, fat compounds.

Hot Breads: as Biscuits, Muffins, Pancakes:—Use clarified pork or beef fat, hardened vegetable fats, fat compounds, sour cream.

Cakes: as Cookies, Cup, Chocolate, Spice, Ginger:—Use clarfiied beef fat, chicken fat, pork rat, hardened vegetable fats, fat compounds, sour cream, grated chocolate.

Puddings:—Use clarified beef fat, chicken fat, sour cream, chopped suet.

Pastry:—If pastry is used, let it be plain, not rich.

Use hardened vegetable fats, fat compounds.

Sauteing:.Use vegetable oils, clarified beef fat, pork fat, especially bacon fat, chicken fat, savory fats.

Deep frying:—Use oils, fat compounds, clarified beef fat, pork fat, mutton fat, combined with other fats.

But save fats by doing as little frying as possible.

To clarify:—Heat any sweet drippings from beef, pork, mutton, with boiling water, stirring constantly. When the fat and water has boiled freely, set aside dish to cool. Remove cold fat and again heat to drive out all water. Put in crock for use.

Savory fats:—Any fat warmed with a leaf of summer savory and a clove of garlic may be used in sauteing potatoes, hominy, rine.

Soap fats:—Fats which can no longer be used for deep frying, left-over fats, which are not quite sweet, may be put in a crock to save for fall soap-

Spanking Doesn't Cure!

Don't think children can be cured of bedwetting by spanking them. The trouble is constitutional, the child cannot help it. I will send **FREE** to any mother my successful home treatment, with full instructions. If your children trouble you in this way, send no money, but write me to-day. My treatment is highly recommended to adults troubled with urine difficulties by day or night. Address

Mrs. M. Summers
BOX 309 WINDSOR, Ontario

making for home cleaning.

Recipe.—Dissolve 1 can of lye in 1 quart of water; cool. Add 6 pounds of fat, melted but not hot. Stir until white. Pour into pan and cut into squares as it harden. Let it dry thoroughly before using.

Note.—If the soap is to be white the fat must be clarified.

SAVES THE WINDOW CURTAINS

All housewives have experienced the difficulty of keeping muslin curtains from blowing against dusty screens or out on the roof when the windows are raised. Here is the way to solve the difficulty.

I sewed one-half of a garment snapper to teach of the lower outside corners of the hem on the wrong side where it will not show, and the other half of each snapper to the upper outside edges of the curtain about six inches from the top of the curtain.

At night it is an easy matter to snap the hem into these upper fastenings, and the curtains are held out of wind and weather without being crumpled.

CANNING BEETS WITH VINEGAR OR WITHOUT

Clean beets well, leaving two inches of stalk, and then blanche for 10 minutes in boiling water. Then dip them in cold water and remove the skin and stalks. Fill the jars with the beets, flat side down. Pour boiling water over them, adding 1 teaspoonful of salt to 1 quart of water, and put on the lids. Place the jars in a boiler of cold water, put on the cover, and boil for one hour, or until tender. Test with a knitting needle. Remove from the boiler and seal tight.

The same method is used for canning beets with vinegar, except that 1 part of vinegar is used to 4 parts of boiling water. The vinegar may be cold.

SALTED STRING BEANS

Grandmother washed and prepared string beans as for cooking, spread a layer of common salt in a big stone crock, jar, or wooden bucket (using anything except tin), spread a layer of beans upon this salt, and continued the alternate layers of salt and beans until near the top. Then she inverted a plate over the contents and placed a weight on the plate. Her rule was 1 pound of salt to 3 pounds string beans and no water. The beans kept indefinitely and when soaked a while before cooking, tasted like fresh-grown vegetables. Carrots, parsnips, artichokes, etc., were similarly kept.

TO CAN SPINACH OR KALE

Wash the spinach thoroughly through many waters; allow 1 cupful of boiling water to each peck of spinach. Cook until tender, skim spincah from the water and place in jars which have been previously sterilized, packing stolidly. Adjust the rubbers, strain the spinach water through a piece of fine linen, reheat to the boiling point and fill each jar with it to overflowing. Put the lid on, let the jars cook in water 10 minutes after the boiling begins, then tighten the lids. Kale is canned in the same way.

SWEET GRASS BASKETS

Baskets made of sweet grass may be kept clean by carefully wiping them with a damp cloth. The dampness also brings out a delightful fresh odor. This advice came from an Indian woman.

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CANNED BEANS

Gather green tender beans, prepare as for boiling, put in a vessel with 1 cupful of salt dissolved in 3 quarts of water, and cook until about three-fourths done. Put into mason jars, seal tight, and put in a dark place in the cellar. To use, rinse and add fresh water, and cook until tender.

RHUBARB — COMBINED WITH OTHER FRUITS

With strawberries, I use 1 quart of finely cut rhubarb to 1 quart of berries. Cook the rhubarb in just enough water to prevent burning. When it begins to soften, add strawberries and half as much sugar as you have fruit. Cook slowly, stirring often until thickened; turn into jars. This makes a delicious strawberry jam at about half the usual cost. This same recipe may be used with other fruits.

HOW THEY PRESERVED CURRANTS IN 1850

Green currants were gathered when firm and large and put into black glass bottles, to keep away the light. The bottles were filled with fruit, no water, corked tightly, a bit of cloth tied over the top, and put in a dark cellar on their sides. When cooked they tasted much like Bar-le-Duc. Gooseberries and huckleberries may be bottled in the same way.

WILD RASPBERRY JAM

Wash the berries well, heat and boil for 15 minutes. Add three-fourths as much sugar as fruit and boil again for 15 minutes. Pour into small jars or glasses. When cold, cover with sugar to the depth of one-quarter inch, then with a layer of paper. Cover with a lid. These need not be sealed.

MARKETS.

ST. JOHN

Eggs, case, 47c, and 48c.
Eggs, fresh, 55c.
Spring lamb, per lb., 22c and 24c.
Pork, 25c.
Veal, 15c and 19c.
Mutton, 20c.
Butter, Tub, 40c to 48c.
Butter, Roll, 45c to 48c.
Chicken, 40c.
Fowl, 30c to 38c.
Potatoes, bushel, $1.00 to $1.25.

MONTREAL

THE PROVISION MARKET

There was no change in the Toronto market yesterday for live hogs and, according to advices received, there were no indications of any in the near future, prices being maintained, with sales at $19.75 per 100 lbs. weighed off cars, and at $19.50 fed and watered. The Winnipeg market was also reported steady, with the demand ample to absorb all offerings, and sales of selected lots were made at $19 per 100 lbs. weighed off cars. The domestic market today was firm, with trade fairly active in selected lots at $20.25 per 100 lbs. weighed off cars. The tone of the market for dressed hogs was also firm, with a fair amount of business passing in a wholesale jobbing way in abattoir fresh-killed stock at $29 to $29.50 per 100 lbs.

The condition of the market for smoked and cured meats was unchanged. A fair volume of business continues to be done in a wholesale jobbing way in most lines at firm prices, with supplies ample to meet all immediate requirements, and sales of 8 to 10-lb. hams were made at 37c to 38c per lb., 12 to 15 lbs. at 35c to 36c, and heavier weights at 34c to 35c. Breakfast bacon sold at 41c to 42c per lb., Windsor selected bacon at 45c to 46c, and Windsor boneless bacon at 48c to 50c. The demand for barreled pork continues slow and prices were nominally unchanged. American bean pork in car lots were quoted at $43 per barrel duty paid, clear short cut pork at $49, and clear cut back pork at $59.

A fair trade continues to be done in lard in a wholesale jobbing way, there being a steady demand for small lots to meet actual wants and prices were unchanged, with sales of Canadian pure leaf grades at 32c per lb. in 20-lb. wood pails, and at 33c. per lb. in 1-lb. blocks, white American compound lard sold at 27c to 27½c per lb. in 20-lb. wood pails.

THE LOCAL FLOUR MARKET

A very firm feeling prevails in the market for spring and winter wheat flour, but there was no actual change in prices to note. The demand for the Government standard spring wheat grade continues exceedingly good for both local and country account, and sales of car lots for shipment to country points were made at $10.95 per barrel in bags, f.o.b. Montreal, and at $11.05 delivered to city bakers. The trade in winter wheat flour was fair, there being a steady demand for broken lots to meet immediate requirements, and sales were made at $11.60 per barrel in new cotton bags, and at $11.30 in second-hand jute bags, ex-store. There were no new developments in the market for substitutes, prices being steady, with supplies ample to meet all actual wants, and a fair trade was done, with sales of broken lots of rye flour at $12.75 per barrel in bags, delivered to the trade; barley flour at $12.25, oat flour at $12, white corn flour at $12, Government standard corn flour at $10.70 to $10.80, and Graham flour at $11.05.

Millfeed and Rolled Oats

There were no new developments in the market for millfeed, prices for all

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TORONTO

lines being firmly maintained, but the volume of business passing is not large on account of the steady increasing scarcity of some lines. Sales of feed cornmeal were made at $68, pure grain moullie at $67 to $68, barley feed at $63 to $64. mixed moullie at $55 per ton, including bags, delivered to the trade, and shorts were quoted at $40, and bran at $35. The condition of the market for rolled oats was unchanged. There continues to be a good enquiry for supplies, and a fair amount of business was done in broken lots of standard grades at $5.30 per bag of 90 lbs., golden cornmeal at $6.05 to $6.15, and bolted cornmeal at $4.25 to $4.50 per bag, delivered to the trade.

The Baled Hay Market

The tone of the market for baled hay continues strong owing to the somewhat limited supplies coming forward, and the good enquiry from all sources, but there was no further change in prices to note, sales of car lots of No. 1 hay being made at $18 to $19, No. 2 hay at $17, No. 3 hay at $15 to $16, and clover mixed hay at $11 to $12 per ton, ex-track.

Country Produce

There was no actual change in the condition of the local egg situation today, the tone of the market being still very firm, with an active business doing in a wholesale jobbing way, and in consequence supplies coming forward are not much in excess of the daily requirements, consequently the stock in store on spot during the months of August did not increase much, although the receipts for that month were larger than the corresponding one last year. The receipts of eggs for two days were 892 cases, as against 2,803 for the same two days last week, and 1,185 for the corresponding ones last year. The stock of cold storage eggs in store here on the first of the month shows an increase of 10,560 cases as compared with August 1st, and a decrease of 20,791 cases with September 1st, 1917. The stock of fresh eggs on the first of the month shows an increase of 49 cases as compared with last month, and a decrease of 2,446 cases with a year ago.

We quote wholesale prices as follows:

Selected new laid eggs.....51c to 52c
No. 1 stock.....47c to 48c
No. 2 stock.....45c to 46c

The tone of the market for honey remans firm and prices show no important change. The demand for supplies continues good and a fairly active trade was reported in a wholesale jobbing way, with sales of white clover in comb at 25c to 26c per section, white extracted in 30-lb. tins at 23c per lb., and buckwheat honey at 20c to 21c.

The market for potatoes was without any new feature to note. Supplies coming forward are ample to meet all immediate requirements and a good steady trade was done in small lots at $1.50 to $1.60 per bag of 90 lbs.

RAW EGGS CURE CALF DIARRHOEA

Diarrhoea is the most common form of calf troubles met with in hand-raised calves. As stated, much of it will be prevented by sanitary methods of handling the feeding pails, although it is occasionally met with in spite of all precautions. We have had a good many cases of this and have never lost a calf yet. We always begin treatment in the earliest stages of the disorder. We give two raw eggs as soon as the first symptoms of the trouble are noticed, and then one egg night and morning until the trouble is overcome. It might be supposed that if raw eggs will cure diarrhoea that too many would cause costiveness, but such is not the case. As soon as normal condition of the bowels is restored, the eggs have no further effect.

This treatment never fails if begun in time. If bowel troubles are not corrected at once, the passages soon become mixed with blood and the disorder assumes a form of dysentery. A cure after it reaches this stage is doubtful, but treatment is at times effective. Give corrosive sublimate, 7 grains in one pint of water, shaken well before each dose. One tablespoonful of this solution is given twice per day until cured. A druggist should always mxi this prescription. Corrosive sublimate is a deadly irritant poison, and extreme care must be exercised in its use. Calves suffering with bowel disorders must be kept warm and dry at any season of the year and not exposed to the weather.

MUZZLING A "ROBBER" LAMB

It often happens with twin lambs that for the first two or three days the stronger lamb gets practically all the milk, and the smaller continues to grow weaker. To enable the weaker lamb to get started it may be desirable to muzzle the stronger one for a few hours each day during the first week of their life.

Following is a simple way of doing it. A soft string is tied over the lamb's mouth, knotted just behind the ears, and is then brought down under the chin and again tied.—J. C. A.

HER ORDER

She checked the list with the greatest care. She said: "I think that it's all down there—a pound of tea and a box of soap, a bag of flour and a clothesline rope, two pairs of socks and a gingham dress, a laundry tub and a toy express. Then there's curtain rods and a window shade, a cut glass jug to hold lemonade, some kitchen spoons and a box of tacks, a spool of thread and a good strong ax. There's that silk dress length and the art sateen, a driving belt for my old machine, a pail of lard and a kit of pork, a poultry house and a stable fork. There's my winter coat and my hat, of course, those sheepskin mitts and that rocking-horse, a folding bed and a bunch of lace and a nickel watch and a radium face, some liver pills and a pound of glue. "My land!" she said, as she checked it through, "I've clean forgotten the paint and books, the mustard pot and the picture hooks, the frying pan and the dairy pail. It's great to order all these things by mail to shop at home in my easy chair, from my catalogue, when I've time to spare, to look it through for the things I need. It's a most convenient way indeed—on a list like mine they prepay the freight and they'll all arrive at an early date. The time it saves, and the bother too!" And she seemed so sure that I judged she knew!

The Power Behind Your Farm Work
Power is a dominant feature on your farm today. Equip yourself with an efficient power plant and your results are half assured.
A Fairbanks-Morse "Z" Engine
does the work of several men better and more economically.
150,000 farmers are daily demonstrating that the "Z" is the greatest engine value ever produced.
Get acquainted with it and save money. You will find it economical and easy to operate.
For pumping, lighting, sawing, cutting the feed —the "Z" Engine fills every want.
1½ H. P. $90.00 3 H. P. $160.00
6 H. P. $280.00
F. O. F. St. John, N. B.
Get full details today from our nearest branch.
The Canadian Fairbanks-Morse Company, Limited
St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Windsor.
Dealer Service: Your local dealer is a direct representative of the manufacturers. He shares their responsibility. He's at your service to see that you are satisfied.
64

GO TO the nearest Local Tractor Demonstration for your COMMON SCHOOL education in tractors.

COME TO

COBOURG, Ontario, September 17-18-19-20

For Your COLLEGE Education

MR. DEALER—Meet the Manufacturers at COBOURG

THE FOURTH FARM TRACTOR DEMONSTRATION

For all Eastern North America

HOW TO CARE FOR WHEAT CROPS

(Continued from page 745)

soil gives you for your energy. See that there is no spurrious matter in your wheat bin.

You yourself hold in your own hands to a great extent, the destiny of the grain you grow. Never forget that it is possible to reduce ordinary sawdust to a fine flour-like dust and when building bins see that you sweep them out, don't mix the saw dust with the wheat. Cleaning machinery in the mill may handle a lot of the cleaning, **but never** expect to get one hundred pounds of product from that weight of wheat and iron and dirt and weed-seed.

With regard to the wheat itself, every farmer realizes the importance of choosing a good quality of seed. One which gives results and being clean, will grow a standard quality of grain. Many types of grain are used and it really does not interest the miller much which brand you have so long as it is reasonable in size and quality. By standardizing your wheat you standardize your flour and bran and shorts as to quality, texture and appearance. You cannot get good quality flour out of broken, shrunken wheat and screenings. Frozen wheat may be used in flouring btu really does not amount to anything worth considering, and do not expect the miller to do for you, that which you have not done for yourself. Remember always, that the average miller has pleased himself best when he has pleased you, and if he points out possible improvements, he fully realizes that these will reflect more to your benefit than his own.

CHARLOTTE COUNTY EXHIBITION

Attention is directed to the ad. appearing in this issue of the Charlotte County Exhibition to be held at St. Stephen, N. B., September 10-11-12-13. Always a big fair, the energetic board of directors are sparing no pains to make it this year, bigger and better than ever.

Large exhibits are assured in all departments and there will be instruction, as well as amusements, for all who attend. The mid-way at St. Stephen is always a live one, the free exhibitions the best that can be secured, and the Government displays this year will be very striking. Purses for horse racing amount to $2400 and all the speedy ones of the year are going to St. Stephen.

The Railroads are offering special rates to St. Stephen for the days of the big fair, September 10-11-12-13. A large number of tent shows have booked space for the mid-way and all popular forms of amusement will be on the grounds. Large list of entries have been received for the horse racing on each of the four days, and some of the best racing down east is assured.

Five troups of performers will furnish free vaudeville attractions each afternoo nand evening, and all who attend will find amusement and instruction well combined.

The St. Stephen fair is always a big and a bright one, and the show next week will be well worth attention.

BIG MERGER PONY FARMS

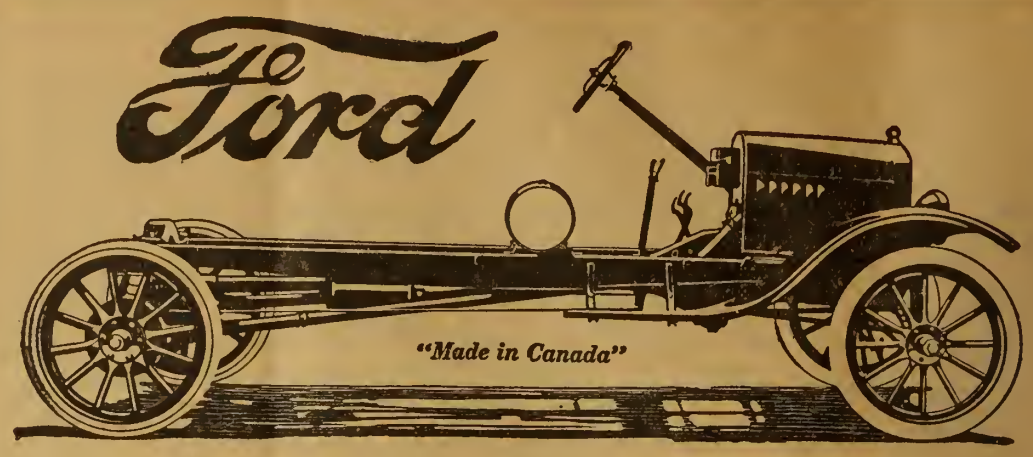
It is announced that Meadowood Pony Farm, Strathmore, near Montreal, has been merged with Mr. T. B. Macaulay's well known Mount Victoria Stock Farm at Hudson Heights, also near Montreal.

Mr. J. E. Chandler, the propietor of Meadowood Farm will be manager of the new pony farm, which without a doubt is the strongest herdo f Shetlands in America. Easily the best blooded Shetlands are in this herd which is headed by the International Champion Silver Star of Transy, which was imported by Mr. Macaulay along with many other famous Shetland ponies from the Shetland Islands.

Mount Victoria Farm is in a position to supply foundation breeding stock, show ponies, young stock and ponies for children and general use.

The bringing together of the two herds means much in the breeding of ponies in Canada. A new pony with all the lovable disposition of the Shetland and the attractive steppin of the Hackey will be produced on the farm by crossing registered prize winning hackey stallions with prize winning Shetland mares.

This is calculated to produce a pony of about twelve hands high suitable for saddle or harness. The Sehtlands will beraised exclusively for children's use and each will be guaranteed.



A Truck for the Farmer

FARM equipment which will effect a time and labor-saving, and therefore a money-saving, must be carefully considered by every good farmer now-a-days.

The farm wagon, which for years was the most useful of all farm equipment, is now being replaced on the best farms by a sturdy, dependable motor truck. The truck will haul any farm product—fruit, grain, vegetables, stock, fertilizer, or wood—around the farm, or to the town or city many miles distant, in half the time, and at a much lower cost.

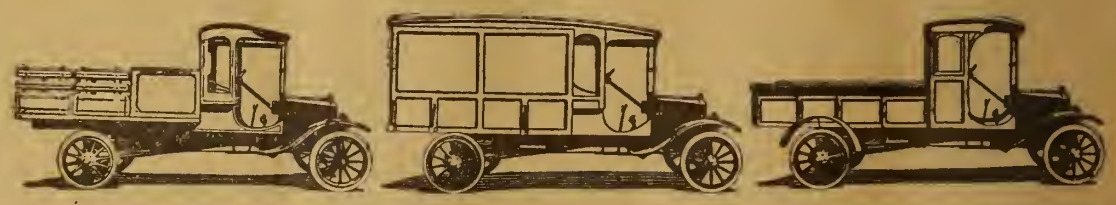
The Ford One-Ton truck is a rapid, economical and very serviceable means of transport. One of these on your farm will save you weeks of time in a single season and will enable you to pass through a crisis of labor shortage with less difficulty.

The Ford truck is supplied as a chassis only. This permits you to select any of the many body styles especially designed for the Ford truck and already on the market. Thus you can mount the one which suits your individual requirements.

Price $750 f.o.b. Ford, Ont.

See any Ford Dealer in Canada, or write for a catalog

Ford Motor Company of Canada, Limited
Ford, Ontario



Three of the many body styles that may be mounted on the Ford truck chassis

ADVANTAGES OF MILK AS A FOOD

To sum up, milk has peculiar advantages as human food:—

1. It contains all classes of food substances, proteins carbohydrates, fats, minerals and vitamines.
2. Its proteins are the most efficient known.
3. Its mineral matter is abundant and well balanced to meet the needs of the young or adults.
4. It contains both water soluble and fat soluble vitamines in comparatively large amounts.
5. Its use controls intestinal bacterial growths and prevents auto-intoxication.
6. It furnishes protein more cheaply than do other foods which are as easily and cheaply digested, such as meat and eggs.
7. It is recognized as absolutely necessary for the growth and health of children.

Horses feed naturally on the ground. Remember this in arranging the mangers and feed boxes.

Adjust the hames to the collar and save sore necks and shoulders.

COSSAR STOCK FARM
Lower Gagetown, N. B.

Importers and breeders, Clydesdales, Dairy Shorthorns aed Border Leicester Sheep. Present offerings: 1 imported stallion, several young bulls, six to fifteen months old also a number of ewe and ram lambs for fall delivery.

G. C. Cossar, Prop. J. Meiklejohn, Agent.

GUERNSEYS !

For Sale—Registered stock. Male or female.

T. D. BLAIKIE,
Great Village, N. S.

Registered Stock for Sale

Guernsey and Ayrshire Bulls, ranging from nine months to eighteen months old.

Guernsey and Ayrshire New Milch Cows. Also Young Calves of both breeds. Last but not least, Registered Shropshire Ram Lambs. The above will be shown at Shubenacadie District Exhibition.

John McDonald & Son
Shubenacadie, N. S. Bloomfield Farm

ELMHURST FARM

Eggs for hatching, from the best of Buff Orpington and White Plymouth Rocks, $2.00 per 15.

R. R. BLACK, Proprietor
Oxford Junction, N. S.

Elmwood Stock Farm
OFFERS FOR SALE:

Two choice young Holstein Bulls, 15 and 19 months old, sired by Dutchland Pieterje Count, whose four nearest dams have records averaging 28.61 lbs. in 7 days, a grandson of Colantha Johanna Lad, "the world's greatest bull," 101 A.R.O. daughters, 4 over 32 lbs. and 7 over 30 lbs. Three of them world's records for 365 days.

W. L. ETTER, - Shubenacadie, N. S.

Shorthorn Cattle !

High grade registered stock for sale.

J. E. HETHERINGTON,
CODY'S, - - - N. B.

GUERNSEY BULLS!

I offer for immediate sale, the Guernsey Bull, Lord Kitchener, No. 929, calved April 12, 1914. He is a fine type of the breed, and his sire and dam are of choice breeding. Will sell at a moderate price, as I am overstocked. I also have several younger ones for sale.

For particulars apply

C. G. COX. - Canard, Kings Co., N. S.
Successor to Wm. Cox & Son

FOR SALE

Best English Blue Orpingtons, beautiful rich blue birds, three dollars fifteen eggs ($3.00). Handsome Buttercups, prize matings, fine birds, $2.00 fifteen.

SARAH E. MOSES SMITH,
WOODWARDS COVE, - - N. B.

FOR SALE
R. O. P. HOLSTEINS.

Two bulls ready for service, and several bull calves. The right type and prices right.

For description and price write,

D. R. NICHOLSON,
"Riverview Farm", Coxheath, N. S.

For Milk, Butter, Cheese, Veal, Holstein Cows stand supreme. If you try just one animal you will very soon want more. Write the
Holstein-Friesian Association
W. A. Clemons, Sec'y, St. George, Ont.

FOR SALE!

Present offering, one Bull Calf.

P. R. L. FAIRWEATHER,
Rothesay - - - N. B.

Lawndale Stock Farm
Jerseys and Shorthorns (Pure Bred)

JERSEYS

Two registered heifers, dropped in May, 1918; solid color (fawn.) The dams of these calves are heavy milkers; the sires are our two herd bulls.

bulls, also two registered bull calves dropped in August, 1918.

We have just received three females imported direct from the Island of Jersey.

SHORTHORN:—

One yearling heifer, just bred, red, and a heifer calf, dropped in June, 1918, red, little white. The dams are good milkers, the sire a son of "Stately Monarch," grand champion in three Provincial Shows. Our Shorthorn herd bull was recently imported from the herd of Lord Rothschild, Tring Park, England.

I. M. LOVITT, M.D.,
Yarmouth North, - Nova Scotia

Maple Green Farm Holsteins

Just now we are offering some fresh calved cows and some due to freshen shortly, also yearling heifers and heifer calves, all with official records or from official record dams. Remember this is the only herd in Eastern Canada which owns two Jr. 3 year olds with official records of 25.05 and 26.54 lbs. butter in 7 days.

Herd sires in service. "Maple Grove Mercena Mercedes," No. 11727, the sire of our 26.54 lb. Jr. 3 year old and who so far has not a tested daughter testing under 4%. Our Jr. herd sire, "Homestead Hengerweld Rooker," No. 20652, three-quarter brother to our 25.05 lb. Jr. 3 year old.

For particulars write

R. L. HICKS
Dalhousie Jct., - - N. B.

ROSEWARNE
S.C. White Leghorns

I am now booking orders for baby chicks and hatching eggs from my well known bred-to-lay strain. Chicks will be very scarce this spring, and there will be a wild scramble later on for supplies, so get your order in early and pick your date.

My cockerels and pullets, out of same matings as day-old chicks were sold from last season, swept the board at Halifax.

Send for prices and mating list.

ERNEST CRAZE
Port Williams, - - N. S.

GLENRANE STOCK FARM

We are offering some very fine pure bred registered calves from 2 weeks to 8 months old These calves are sired by "Homestead Hengerweld Rooker" ¾ brother to a 26 lb. jr. 3 yr. old. They will be sold reasonably if taken at once. We also have several litters of very fine York pigs.

ROBERT C. HICKS,
West Bathurst, - - - N. B.

Chester White Pigs for Sale

Book your orders now for Chester White Pigs from four weeks upward. Pairs furnished that are not akin.

W. A. ERB, SUSSEX, N. B.

ELMHURST STOCK FARM
Clydesdale Horses, Hereford Cattle, Leicester Sheep.

We are offering 4 Bulls fit for service, 9 to 12 mos. old. They are good thick, straight bulls fit to head a herd in any county. Prices moderate. We have Rams and Ewes for fall delivery. Write your wants, we can suit you in quality and prices.

William O'Brien & Sons, Windsor, N.S.

FOR SALE!

Several young bulls of serviceable age and youngsters. Well bred and good individuals. Prize winners at our recent show. Their dams won 1st. 2nd and 3rd in the ring of aged cows; also 1st and 2nd in the dairy test, 1st in heifer class and 1st in grade cow, competing against all breeds at our late show at Charlottetown. with an average fat of nearly 4 per cent. We will send photos of these young bulls and their dams to any prospective buyers. For quick sale we have priced them at from $50 to $125.

W. M. LEA,
"RIVERSIDE FARM," VICTORIA, P.E.I.

SUNNYSIDE STOCK FARM
Ayrshire Cattle and Chester White Swine

A number of Young Bulls fit for service, out of Record of Merit cows. This herd has been under test for a number of years. Herd now headed by "Star of Fern Brook" and by "Star Glen Cairn", brother of the noted Jean Armour.

J. FRANK ROACH, Proprietor,
Phone 111. - - - - Sussex, N. B.

HIGHLAND LAKE HOLSTEINS

Herd sire, AVONDALE PONTIAC ECHO (under lease) a son of MAY ECHO SYLVIA, the world's record cow. Only one other 41-lb. bull in Canada.

We have young bulls for sale whose two nearest dams (both Canadian champions) average as bigb as 35.62 lbs. butter in seven days; another whose two nearest dams are both 100-lb. cows; and one ready for service from a 41-lb. sire and an 18,000-lb two-year-old dam. Send for our BOOK OF BULLS. A few females for sale. Satisfaction guaranteed.

R. W. E. BURNABY (Farm at Stop 55, Yonge St. Radial) JEFFERSON, ONT

BELLEVUE STOCK FARM
Shorthorn Cattle and Shropshire Sheep

The early maturing and good doing sort—bred from Show stock in every cross.

C. A. ARCHIBALD, Bellevue, Clifton, N. S.

NETHERLAND FARM, Hammond River, N. B.
HOLSTEIN CATTLE AND YORKSHIRE SWINE
WM. S. HARDING, PROP.

We rae all sold out of last years crop of calves. We are now offering some young bull calves sired by Sir Foforit Schuiling. Also a fine litter of young Yorkshire pigs.

ELMHURST SHORTHORN STOCK FARM

Present Offerings—Six exceptionally good red and roan bulls, 10 to 18 months of age, from superior milking dams. Write me for prices and particulars before placing your orders elsewhere

C. C. H. EATON, - - - CANARD, N. S.

COBEQUID FARM HOLSTEINS

We have sold 13 head in the last few weeks but there are some dandy good ones left yet. Special offering—2 heifer calves and several bull calves, sired by Prince Colantha's Canary B. whose four nearest dams average 32.84 lbs. butter in 7 days; 105 lbs. milk in one day. These are beauties. A couple of yearlings and two-year-old heifers, bred to Prince, due in the fall. Several young cows and heifers milking, due to calve from August to December. We have a couple of bull calves fit to head the best herds in the provinces. Come and see them. We would be Pleased to meet you at Truro if notified.

S. DICKIE & SONS, R. R. No. 5, TRURO, N. S.

BULL'S CREEK FARM
R. O. M. HOLSTEINS

EXTRA SPECIAL—I recently imported several Tuberculin Tested R. O. M. daughters of "Sir Lyons Segis" whose six nearest dams average over 30 lbs. butter each in seven days. These cows have in turn been bred to "Riverdale Lyons Echo Posch" whose dam, grand-dam and great grand-dam and dam's sister average officially 34 lbs. butter each in seven days. Am offering young bull calves of this remarkable combination of breeding and will sell a heifer calf or two. Get your orders in quick, they won't be here long.

J. H. STOCKTON, BULL'S CREEK FARM, WOODSTOCK, N. B.

WISH-TON-WISH STOCK FARM
Breeders of Big, Smooth, Heavy Producing Holsteins

The kind that fill big pails the year through. Can sell a few good bulls fit for service and some choice Bull Calves; also some Heifers and Cows due to freshen soon. Write or 'phone for description and prices.

HARDING BROS., Proprietors, WELSFORD, New Brunswick.

Registered Jersey Heifer

We offer for sale the registered Jersey Heifer, "Pride of Rose Bank," 3 years old, milking sired by Foxball's St. John O'Dreamwold, whose dam gave over 10,000 lbs. milk in a year. Also Peerless Incubator, Barred Rock and White Leghorn Cocks and Cockerels, which would exchange for Barred Rock Hens.

ORCHARD HILL FARM
Brown's Flats - N. B.

Five Ayrshire Bulls for Sale !

From good milking strain. All fit for service.

Prescott Blanchard,
Truro, - - Nova Scotia

Two Cents a Word.

This department is one of the most valuable in the MARITIME FARMER. At a cost of only 2 cents a word, you can advertise anything you wish to buy, sell or exchange. The aderess must be counted as part of the advertisement and each initial or a number counts as one word. Cash must accompany each order and advertisement must have address on, as we cannot forward replies sent to this office. Copy must be received not later than Friday before the date of issue, which will always be found on the editorial page of the proceeding issle. No black faced type or display of any kind willhe allowed under this head, thus making a small add as noticeable as a large one. The rate for this column is 2 cents a word, each insertion. MARITIME FARMER, Sussex N. B.

PICKLING ONIONS FOR SALE.—H. E. GOLDING, Sussex, N. B.

WANTED TO PURCHASE a number of hives f hees; state price and particulars to C. HOGAN, Church St., Greeewich, Kings Co., N. S.

FOR SALE—Some real good Jersey hulls and Berkshire hoars, ready for heavy service. Also some youngsters. All registered stock.—J. R. SEMPLE & SON, Truro, N. S.

USED STATIONARY ENGINES—2 H. P., 4 H. P., 7 H. P., 12 H. P., 15 H. P., also others. Write for prices—GUARANTEE MOTOR CO., Hamilton, Canada.

WANTED—Registered yearling ram, Shropshire or Oxford. Also reglstered York Boar. D. L. STEWART, Ohan, Richmond Co., N. S.

PORTRAIT AGENTS WANTED—Send for Catalogue. Prints Solar and Bromide. Finished Portraits, convex or flat, Frames, Glass and all supplles. MERCHANTS PORTRAIT CO., Toronto.

LADIES WANTED to do plain and light sewing at home, whole or spare time, good pay, work sent any distance, charges paid. Send stamo for particulars. NATIONAL MANUFACTURING COMPANY, Montreal.

A RANCHER'S LIFE in Canada and Guide to Rural Industries, fruit growing, poultry keeping, ducks, geese, turkeys, pigeons, hares, goats, hees, flowers, etc. 25c post paid. By C. H. PROVAN, Langley Fort, British Columhia.

AGENTS WANTED—$1000—You can make it in your county with our fast selling Combination Cooker. One salesman hanks $388 55 the first month. Another agent sells 20 in two hours. Others cleaning up $10 daily. No capital necessary. Goods shipped to reliable men on time. Territory going fast. Write quick to secure your field.—COMBINATION PRODUCTS CO., Foster, Que.

Springbrook Farm Ayrshires !

PRESENT OFFERINGS:—Eight nice young Ayrshire bulls, ranging in age from 26 months to 15 months. All these bulls are sired by the Champion Ayrshire Bull of the Maritime Provinces for two years in succession. Also females, all ages.

McINTYRE BROS.
SUSSEX, - - N. B.

EGGS FOR HATCHING !

Breed Standard bred poultry and more of it. Eggs or stock from every popular variety can be had through our Association.

Eggs from all heavy breeds such as Bramahs, Plymouth Rocks, Wyandottes, etc., $2.00 for 15 eggs.

Eggs from the lighter breeds such as Leghorns, Minorcas and Black Spanish, etc., $1.50 for 15 eggs.

Write us your Poultry wants.

Cumberland Co. Poultry & Pet Stock Association
E. F. McKIM, Secretary
Amherst - - N. S.

FOR SALE!

One No. 50 Bell Ensilage Blower in perfect working order, has only been used a little. Will sell for about one-half the price of a new one. For particulars apply to

P. L. MORSE,
Berwick

OINTMENTS AND SPRAYS TO KEEP THE FLIES AWAY FROM CATTLE

There is nothing that will keep flies entirely away from cattle but any one of the following mixtures wlil be found useful:

1 pound rancid lard; ½ pint kerosene. (Apply with the hands or brush.)

3 parts fish oil; 1 part kerosene. (Apply with small spray pump.)

2 parts cottonseed oil, or fish oil; 1 part pine tar. (Apply with large paint brush.)

2 ounces pennyroyal; 1 quart of olive or rape oil. (Apply with brush.)

In case of the horn fly, pine tar or crude oil may be plastered around the base of the horn or used somewhat diluted over the head and shoulders.—Geo. H. Glover, Colorado Agricultural College, Fort Collins, Colo.

BREEDERS' DIRECTORY

Our charge for inserting names in this Directory is $2.00 per year for each line under each heading. Money must he paid strictly In advance. Names taken out promptly when time is up Stamps taken.

Guernsey Cattle.

Barry P. Hill, Great Village, N. S.
T D. Blaikie, Great Village, N. S.
John N. Chute, Berwick, N. S.
J. Frank Roach, Sussex, N. B.

Holstein Cattle.

F. W. C. Nase, Nerepis, N B.
F. W. C. Nase, Nerepis Station, Kings Co., N. B'

Ayrshire Oattle

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.
C. A. Archihald, Truro N. S.
John H. Hughes, Petitcodiac, N. B.
J. Frank Roach, Sussex.

YORKSHIRE CATTLE

E. Chaldecott, Monkham's Farm, West Merigornish, Pictou Co., N. S.

Shorthorn Cattle.

Walter E. Eaton, Upper Canard, N. S.
Isaac Chipman & Son, Chipman Corner, Kings Co., N. S.
B. H. Power, Selma Hants Co., N. S.
C.A. Archihald, Truro, N. S.

Barred Plymouth Rocks.

Craig Bros., Amherst, N. S.

Holsteins Hold All Championships

World's Record Price for Cattle—
Carnation King Sylvia....$106,000.00
World's Record for Butter, One Year—
Duchess Skylark Ormsby 1506.35 lbs.
World's Record for Milk, One Year—
Lutscke Vale Cornucopia 31246.9 lbs.
World's Record for Butter, Seven Days
Segis Fayne Johanna.....50.68 lbs.
World's Record for Milk, Seven Days—
May Echo Sylvia.....1005.8 lbs.
Canadian Record for Butter, One Year
Lady Pietje Canary's Jewel
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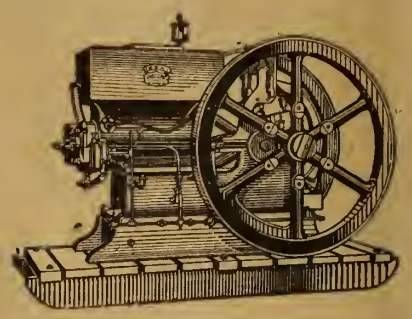

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